



RESEARCH PAPER 08/15
12 FEBRUARY 2008

China's Military Posture

The strategic consequence of China's rise to political and economic prominence has become a major pre-occupation for academics and policymakers, particularly in the United States.

In light of that debate, this paper is intended to be an introduction to China's current military posture. It examines China's strategic priorities and obligations, its military capabilities and the aims of its military modernisation programme. It also discusses the dichotomy between what China characterises as its "peaceful development" and its military ambitions, and addresses the inevitable question of whether China's military build up can be considered benign.

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Summary of main points

In December 2006 China published its bi-annual defence white paper, in which it set out its assessment of the prevailing strategic environment, and its requisite priorities. Recognising that China's national interests are "closely bound up with the rest of the world as it is today", the paper advocates the pursuit of "peaceful development", multilateralism and a military posture that is premised on the concept of non-intervention. It firmly commits China not to "engage in any arms race" or "pose a threat to any other country". As one of the five acknowledged nuclear weapons states, it also states that China will continue to pursue a defensive nuclear strategy with the development of a limited nuclear capability and will remain committed to a nuclear 'no first use' policy.

At present China's strategic priorities are, first and foremost, regionally focused. The possibility of a US-backed formal declaration of independence by Taiwan is identified as the single biggest threat to China's national security and US influence in the Asia-Pacific region as the most important factor in destabilising regional security. Concerns over the increasingly pro-active military posture of Japan and North Korea's nuclear and ballistic missile programmes have also been expressed.

This regional focus is reflected in China's extensive conventional military forces, which are configured for internal security, territorial defence and limited regional offensives, potentially against Taiwan. Due to the limitations of China's own military-industrial complex, the PLA's conventional capabilities are also dominated by foreign military technologies. China's ability to project military power beyond its sphere of influence is limited to its nuclear deterrent capability.

Over the next few decades China is seeking to modernise its military to enable it to conduct and sustain "informationized wars" and in defence of its increasingly global interests. That modernisation has already begun with significant investment in the navy, air force and strategic missile forces. China is also seeking new capabilities, including expeditionary assets and those which afford information superiority, including asymmetric capabilities that would offset the US' qualitative and quantitative superiority on the battlefield.

These modernisation plans have been underpinned by a defence budget which has consistently risen by over 10% each year since the mid 1990s, reaching approximately \$45bn in 2007. Most analysts concur, however, that Chinese military spending is between two and three times higher than officially reported, making China's defence budget the second largest in the world. The ability of China to sustain the pace of its ambitious modernisation agenda will depend upon the Chinese economy maintaining similar levels of growth in the foreseeable future.

The dichotomy between what China characterises as its "peaceful development" and its military ambitions, has inevitably raised the question of whether China's military build up is indeed benign.

An introduction to China's political and economic development is examined in Library Research Paper RP06/36, *A Political and Economic Introduction to China*, June 2006. A

chronology of recent developments is also available in Library Standard Note, SN/IA/4589,
China: Recent Developments, 21 January 2008.

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I China's Defence Policy

A. Organisational Structure

The Communist Party holds the real political power in China's *de facto* one party state, including over the military. Party organisations run in parallel to those of the Government at all levels, while the overwhelming majority of delegates to the National People's Congress (NPC) are party members.

The NPC is responsible for exercising the defence functions and powers provided for in the Constitution of the People's Republic of China (PRC). In practice those tasks are undertaken by the Standing Committee of the NPC, the President of the PRC, the State Council¹ which directs and administrates national defence tasks such as formulating defence policies and assigning expenditure, and the Central Military Committee (CMC) which assumes and directs unified military command and control of the People's Liberation Army (PLA): essentially the nation's armed forces. The CMC is also responsible for the modernisation and expansion of those military forces.²

Under the State Council is the Ministry of National Defence; while the General Staff Headquarters of the PLA, the General Political Department, the General Logistics Department and the General Armaments Department are all departments of the CMC. Under the General Staff Headquarters there are seven regional military regions which incorporate 28 provincial military districts:

- **Shenyang:** Heilongjiang, Jilin and Liaoning
- **Beijing:** Beijing, Tianjin Garrison, Inner Mongolia, Hebei, Shanxi
- **Lanzhou:** Ningxia, Shaanxi, Gansu, Qing-hai, Xinjiang and South Xinjiang
- **Chengdu:** Chongqing Garrison, Sichuan, Guizhou, Yunnan and Tibet
- **Guangzhou:** Hubei, Hunan, Guangdong, Guanxi, Hainan
- **Jinan:** Shandong, Henan
- **Nanjing:** Shanghai Garrison, Jiangsu, Zhejiang, Fujian, Jiangxi and Anhui

It is through the four departments of the CMC that leadership and control is exercised over the military regions and over four of the five branches of the PLA: the PLA Ground Forces, the PLA Navy, the PLA Air Force and the People's Armed Police (paramilitary forces). The fifth branch of the PLA: the Second Artillery Corps (strategic missile forces) is, however, under the direct leadership of the CMC.

The Ministry of National Defence does not exercise any direct authority over the PLA and as such is considered far less powerful than the CMC. However, it does play an important role in ensuring continuing party control over the armed forces and in liaising with foreign militaries.

¹ The State Council is the official government of China.

² The Chairman of the CMC is elected by the NPC and is responsible to them. The CMC's other members are agreed by the NPC, or its Standing Committee, on the basis of nominations from the CMC chairman. The chairman assumes overall responsibility for the work of the CMC and has the power to make final decisions on matters within the functions and powers of the CMC.

B. 2006 Defence White Paper

China's own assessment of the strategic priorities and military capabilities of its regional neighbours and other countries of interest, including the US, are not well documented, at least not publicly.³ Outside scholars and commentators must therefore rely on the publication of China's bi-annual defence white paper for an insight into China's strategic thinking and requisite policy responses.

China's latest defence white paper was published in December 2006.⁴ At the heart of that assessment is an acknowledgment of the opportunities and challenges for global security that are presented by the political and economic dynamics of an increasingly multi-polar world. Balance of power politics fuelled by multilateralism, globalisation and economic interdependence are key themes and as such China recognises that its national interests are consequently "closely bound up with the rest of the world as it is today".⁵

Within this context the paper advocates the pursuit of policies that promote "peaceful development", multilateralism⁶ and a military posture that is premised on the concept of non-intervention. It firmly commits China not to "engage in any arms race" or "pose a threat to any other country".⁷ It also suggests that China will continue to pursue a defensive nuclear strategy with the development of a limited nuclear capability and will remain committed to a 'no first use' policy of that capability "at any time and under any circumstances".⁸

Despite acknowledgement of the impact that global interdependence is likely to have on China's national interests, its strategic priorities, first and foremost, are regionally focused. While recognising that the security situation in the Asia-Pacific region is relatively stable at present, awareness that new security challenges may present themselves in the future is a central theme. Specifically, the paper identifies the possibility of a US-backed formal declaration of independence by Taiwan as the single biggest threat to China's national security. It also considers the evolving nature of US influence in the Asia-Pacific region, both in terms of deployed military capabilities and its alignment with other Asia-Pacific countries, to be the single most important factor in destabilising regional security. US influence aside, the white paper also touches on other regional concerns including the increasingly pro-active military posture of Japan, the

³ In contrast to the United States which publishes an annual strategic assessment of China's military power (see part V A).

⁴ *China's National Defense in 2006*. A translation of the Chinese text was released by the official Chinese news agency Xinhua and reported on *BBC Monitoring Asia Pacific* on 29 December 2006. A copy is also available at:

<http://www.china.org.cn/english/features/book/194421.htm>. This is the fifth Chinese defence white paper since 1998.

⁵ *ibid*

⁶ China is, for example, the 13th largest contributor to UN peacekeeping operations (correct as of December 2007: http://www.un.org/Depts/dpko/dpko/contributors/2007/dec07_1.pdf)

⁷ *China's National Defense in 2006*.

⁸ *ibid*

implications of the developing nuclear and ballistic missile programmes of North Korea⁹ and China's ongoing territorial disputes and claims over maritime rights and interests in the region.¹⁰ More broadly the white paper also recognises that non-traditional security challenges in areas such as international terrorism, energy and resources, demographics, the environment and economic globalisation will increasingly provide a new dynamic.

It is this strategic backdrop which has been the subsequent driving force behind China's military modernisation plans.¹¹ The paper clearly sets out the need for China's military to keep pace with technological change and to conduct that military modernisation agenda in line with the steady economic development of the country. Therefore, the overall objective of the next few decades is to:

pursue a three-step development strategy in modernizing its [China's] national defence and armed forces, in accordance with the state's over-all plan to realize modernization. The first step is to lay a solid foundation by 2010, the second is to make major progress around 2020, and the third is to basically reach the strategic goal of building informationized¹² armed forces and being capable of winning informationized wars by the mid-21st century.¹³

The long term implication of this strategy is that China is seeking to achieve technological and strategic parity with the most advanced militaries in the world over the next few decades. Yet in line with the white paper's overall theme of "peaceful development", the stated purpose for this military modernisation agenda is to provide for the purpose of "active defence" and ensure China's continued participation on the world stage in pursuit of peace and stability. China's new defence mission is therefore defined in the paper thus:

Upholding national security and unity, and ensure the interests of national development. This includes guarding against and resisting aggression, defending against violation of China's territorial sea and air space, and borders; opposing and containing the separatist forces for "Taiwan independence" and their activities, taking precautions against and cracking down on terrorism, separatism and extremism in all forms. The People's Liberation Army (PLA) is dedicated to performing its historical missions for the new stage in the new century, namely, providing an important source of strength for consolidating the ruling position of

⁹ A report published by the Center for Strategic and International Studies and the US Institute of Peace in December 2007 suggested that China could send troops into North Korea to restore order and secure the country's nuclear arsenal in the event of the regime's collapse. A copy of that report, *Keeping an Eye on an Unruly Neighbour*, is available at:

http://www.csis.org/media/csis/pubs/071227_wp_china_northkorea.pdf

¹⁰ China is heavily reliant on its commercial shipping lanes, with approximately 80% of China's crude oil imports transiting the Straits of Malacca. A number of analysts have questioned China's ability to protect its foreign energy supplies and specifically the sea lanes through which they travel. It is such concerns that have driven the modernisation of China's naval fleet in the last few years (see part III A 2).

¹¹ China's modernisation plans are examined in greater detail in part IV.

¹² "Informationized warfare" has largely been interpreted as network centric warfare. NCW exploits information superiority in order to achieve military dominance and decisive effect; while at the same time denying adversaries that same capability. It is characterised by the effective linkage of platforms and people through a network, thereby creating a high level of shared battlespace awareness.

¹³ *China's National Defense in 2006*

the Chinese Communist Party (CCP), providing a solid security guarantee for sustaining the important period of strategic opportunity for national development, providing a strong strategic support for safeguarding national interests, and playing a major role in maintaining world peace and promoting common development.¹⁴

For many analysts this commitment toward “peaceful development”, multilateralism and a defensive military posture is not, however, easily reconciled with the extent and objectives of the military modernisation programme that China appears to be pursuing. In support of that opinion they point to the inclusion in the white paper of priorities such as the development of trans-regional mobility, the improvement of air strike and strategic force projection capabilities: what are essentially offensive and not defensive capabilities. The white paper states:

The Army aims at moving from regional defence to trans-regional mobility, and improving its capabilities in air-ground integrated operations, long-distance manoeuvres, rapid assaults and special operations. The Navy aims at gradual extension of the strategic depth for offshore defensive operations and enhancing its capabilities in integrated maritime operations and nuclear counterattacks. The Air Force aims at speeding up its transition from territorial air defence to both offensive and defensive operations, and increasing its capabilities in the areas of air strike, air and missile defence, early warning and reconnaissance, and strategic projection. The Second Artillery Force aims at progressively improving its force structure of having both nuclear and conventional missiles, and raising its capabilities in strategic deterrence and conventional strike under conditions of informationization.¹⁵

Discussion of China's modernisation agenda and the debate on China's military ambitions is set out in greater detail in parts IV and V.

C. Arms Export Policy and International Arms Control Obligations

Between 2002 and 2006 China was the 8th largest exporter of conventional arms in the world, exporting an estimated \$2.1bn of equipment.¹⁶ Those exports have largely been mass produced, cheap and relatively unsophisticated weaponry such as small arms and light weapons to countries including Pakistan, Burma, Bangladesh, Kuwait and most of the countries on the African continent.¹⁷

As a major exporter of arms to the developing world and a permanent member of the UN Security Council, China has long been considered as having an important role to play in

¹⁴ *China's National Defense in 2006*

¹⁵ *ibid*

¹⁶ SIPRI Yearbook 2007, p.422. The top seven arms exporters during this period were the United States, Russia, Germany, France, UK, Netherlands and Italy.

¹⁷ The ability of China's military-industrial complex to manufacture advanced weaponry is however limited. Consequently it relies on foreign suppliers, largely Russia, for advanced technologies either through technology transfers or licensed production agreements. This is examined in greater detail in part III A.

the development of a multilateral arms control framework, and in progressing disarmament and non-proliferation. Indeed, China's 2006 white paper states:

China stands for effective disarmament and arms controls that are just, reasonable, comprehensive and balanced in nature. China opposes nuclear proliferation, and endeavours to advance the process of international nuclear disarmament. China observes the purposes and principles of the UN Charter, honours its international obligations, and [...] plays an active part in maintaining global and regional peace and stability.¹⁸

However, China's attitude towards arms exports and international arms control more generally has been criticised as inconsistent and at times in contravention of both its international obligations and the aspirations of its latest white paper.

This inconsistency is largely reflected by the fact that while China is a signatory to the majority of arms control treaties relating to nuclear, biological and chemical weapons (NBC) and missile-related technologies it does not, in contrast, support many of the international measures relating to the policing of conventional arms exports. Indeed several commentators have criticised China in the past for using conventional weapons exports as a tool of foreign policy.¹⁹ More recently, organisations such as Amnesty International have condemned China for disregarding human rights in its export licensing decisions, fuelling conflict in countries such as Sudan, Burma and Nepal and exporting arms to unstable countries in exchange for raw materials in order to support the country's rapid economic growth.²⁰ China is also a major source for the illicit arms trade, with Chinese arms reportedly having been used, for example, by insurgents in Iraq and Afghanistan.²¹

1. Arms Export Control Policy

China has always maintained that it practices strict control over the transfer of conventional military equipment. In 2002 it published a revision of its 1997 *Regulations on Export Control of Military Items* which give legal effect to the principles upon which China approves the export of military goods. As part of that revision China also expanded its missile export control regulations.²²

On the basis of those regulations, China's stated policy with respect to the export of conventional arms, including missiles, adheres to the following principles:

- The export of military items is prohibited if it damages China's national interests and security.

¹⁸ *China's National Defense in 2006*

¹⁹ During the 1950s, 60s and 70s for example Chinese arms were given as free military aid to governments and revolutionary groups supportive of Chinese interests.

²⁰ Amnesty International, *China: sustaining conflict and human rights abuses*, June 2006. Available at: <http://web.amnesty.org/library/index/ENGASA170302006>

²¹ "China to declare defense spending, arms sales to UN", *Defense News*, 3 September 2007

²² A copy of the 2002 regulations are available on the website of the Nuclear Threat Initiative at: http://www.nti.org/db/china/engdocs/exconmpe_1002.htm and http://www.nti.org/db/china/engdocs/expreg_0802.htm.

- Military items must be for the legitimate self defence of the recipient country.
- Exported military items must not undermine global and regional stability.
- Exported military items must not be intended for interference in the internal affairs of the recipient country.

If any of the provisions set down in the updated regulations contradicts any of the international conventions to which China is a signatory, or in which China participates, then the regulations state that the provisions of the international convention will take precedence. However, Article 6 of the regulations also provides for exceptions with respect to “those on which the PRC has reserved its opinions”.

In line with these principles, export licence applications are examined and approved by the State Administrative Committee on Military Products Trade, and under the guidance of the State Council and the CMC. Only registered and approved government departments and companies can engage in transfers of military equipment.

Under the updated regulations, however, there is no requirement on the government to publish information regarding its arms transfers. Nor is there a requirement, as Amnesty International has highlighted, for the human rights records of recipient countries to be considered. In its 2006 report on Chinese arms exports, Amnesty commented:

China describes its approach to arms export licensing as ‘cautious and responsible’, yet the reality couldn’t be further from the truth. China is the only major arms exporting power that has not signed up to any multilateral agreements with criteria to prevent arms exports likely to be used for serious human rights violations.²³

a. UN Register of Conventional Arms

In 1991 the UN General Assembly passed resolution 46/36 L on Transparency in Armaments which established the UN Register of Conventional Arms.²⁴ That resolution calls upon member countries to report, among other things, annual data on international arms transfers relating to certain categories of equipment, including warships, combat aircraft, missile systems, attack helicopters, tanks and armoured combat vehicles.²⁵

China did not participate in the 1991 vote, although in the first few years after the register was established China did voluntarily submit a declaration of its arms exports and imports. In 1997, however, China ceased its participation in the register in protest at US arms sales to Taiwan and has subsequently failed to submit any data on its international arms transfers to the UN for over 10 years. This position has frequently been criticised by commentators who have accused the country of being secretive and lacking in transparency.

In response to those criticisms the Chinese government announced in September 2007 that it would resume the declaration of annual arms sales data to the UN as part of a

²³ Amnesty International, *China: Sustaining Conflict and Human Rights Abuses*, 12 June 2006

²⁴ <http://disarmament.un.org/cab/ares4636l.html>

²⁵ Further information is available at: <http://disarmament.un.org/cab/register.html>

wider set of measures intended to ease concerns over military transparency.²⁶ However, the amount of data that China will submit to the UN or indeed whether it will fulfil its obligations at all, remains to be seen. The date for the submission of data for the 2007 calendar year is 31 May 2008.

2. International Arms Control

a. *Conventional Weapons Agreements*²⁷

- **Wassenaar Arrangement**

The Wassenaar Arrangement (WA) was established in 1996 to promote transparency and greater responsibility in the transfer of conventional arms and dual-use goods and technologies and also to complement and reinforce the existing control regimes for weapons of mass destruction and their delivery systems by focusing on the transfer of sensitive dual-use goods and technologies.

China is not a member of the WA, although it has participated in the WA's outreach programme in recent years. According to the Chinese Ministry for Foreign Affairs:

In April 2004, May 2005 and June 2006, China and the Arrangement held three rounds of dialogues in Vienna. Through these dialogues, the two sides had in-depth exchange of views on export control of conventional weapons and dual-use goods, and enhanced mutual understanding and drew on good experiences and practices of each other.²⁸

Despite these overtures China has not, however, given any official indication that it intends to join the Arrangement in the foreseeable future.

- **Convention on Certain Conventional Weapons (CCW)**

The CCW, also referred to as the Inhumane Weapons Convention, seeks to restrict or outlaw the use of certain types of weapons in armed conflict. The operative provisions of the CCW are contained in several protocols annexed to the convention. Currently, there are five protocols in force, relating to non-detectable fragments; landmines and booby traps; incendiary weapons; blinding lasers and explosive remnants of war. Each protocol is only binding on those States Parties that ratify it.

China signed the CCW in 1981 and has ratified each of the protocols, with the exception of Protocol V on explosive remnants of war.²⁹ In its 2006 white paper the Chinese

²⁶ The government also indicated that it would declare its annual defence spending to the UN Office for Disarmament Affairs. This is examined in part II.

²⁷ A list of the international arms control agreements, organisations and regimes to which China is a party is available at: <http://www.nti.org/db/china/regimes.htm>

²⁸ <http://new.fmprc.gov.cn/eng/wjb/zzjg/ks/kjc/fkswt/dbfks/t321014.htm>

²⁹ Protocol V was agreed in 2003 and came into force in November 2006. To date, only 36 of the 104 States Parties to the CCW have ratified Protocol V (*United Nations Office at Geneva, States Parties and Signatories to the CCW*). See Library Standard Note SN/IA/4339, *Cluster Munitions*, for further information on the Protocol V.

government confirmed, however, that it is currently making preparations for the ratification of that protocol.

Significantly China is a Party to amended Protocol II on landmines which regulates, but does not ban their use. That protocol requires that anti-personnel landmines (APL) must be equipped with self-destruct or self-deactivation mechanisms and must be detectable using common mine detection equipment. The responsibility for clearing any mines is also on the government controlling the territory where the mines are located.

At a meeting of the States Party to the CCW in November 2007 the Head of the Chinese Delegation, Ambassador Cheng Jingye, outlined China's commitment to the principles of the CCW. He stated:

The Chinese Government has always attached great importance to the key role of the CCW in resolving the humanitarian concerns caused by certain conventional weapons. It has actively participated in the CCW process and earnestly implemented the obligations under the Convention and its Protocols. Over the past year, the Chinese Government continues to carry out public awareness campaigns about implementation of the Convention and its Protocols among the armed forces and civilian populations nationwide, enhance international exchanges and cooperation and provide relevant international assistance to the least developed countries within its capability. It is ready to continue to work with other parties in promoting a greater role of the Convention in eliminating the humanitarian consequences caused by certain conventional weapons.³⁰

However, according to the Arms Control Association, efforts to start negotiations on extending the CCW to restrict the use of cluster munitions and anti-vehicle mines have been opposed by China in the last few years. Responding to these allegations Ambassador Cheng Jingye also commented:

The High Contracting Parties to the CCW include all major producers, users, importers and exporters of cluster munitions. Therefore, only in the framework of the CCW can relevant efforts achieve realistic and feasible significance. Meanwhile, we believe that, to ensure feasible outcome of our efforts, it is necessary for all parties to enhance exchanges, fully understand and accommodate mutual concerns, and stick to the principle of balancing military necessity and humanitarian concerns. China is ready to work together with other parties in a constructive manner to seek the best approach to resolve humanitarian concerns caused by cluster munitions [...]

Though the 3rd Review Conference failed to reach consensus on [anti-vehicle landmines], China believes that as long as all parties strictly abide by the relevant stipulations of the Amended Protocol II and adopt various useful

³⁰ Statement by H.E. Ambassador Cheng Jinye head of the Chinese Delegation at the Meeting of the States Parties to the Convention on certain Conventional Weapons, November 2007 (<http://www.china-un.ch/eng/xwdt/t380352.htm>)

recommendations proposed in previous discussions [...] in accordance with each country's different situation, the AVL issue will be effectively resolved.³¹

- **Ottawa Convention**

The Ottawa Convention of 1997 bans the use, stockpiling, production and transfer of anti-personnel mines.³² The Convention, which entered into force on 1 March 1999, also provides for the destruction of existing stocks and emplaced mines, and urges assistance for mine victims.

China is not a signatory to the Ottawa Convention having always argued in favour of a restrictive approach on their use, as provided for under the CCW, rather than an outright ban on their production and use. China has maintained the position that landmines are a legitimate means of self defence for many countries and that a total ban would violate the principle that arms control should not decrease a country's security. Indeed, looking to its own, and often contested, borders with India, Vietnam and Russia the Chinese government has argued that landmines are a key capability in ensuring the country's national security.

However in its 2007 *Landmine Monitor* report, the International Campaign to Ban Landmines suggested that China had "shown growing interest in engaging in a dialogue with States Parties to the Mine Ban Treaty" and that in recent years, China has indicated on several occasions that it endorses "the ultimate goal of a total ban on antipersonnel mines".³³

- **International Arms Trade Treaty (IATT)**

The *International Framework Convention on International Arms Transfers*, or the IATT as it is commonly referred to, proposes to establish a number of measures linking arms transfers to the existing obligations of states under international law. States party to the IATT would be obliged to adopt certain minimum standards for the authorisation of international arms transfers, including respect for human rights, international humanitarian law and the promotion of sustainable development.³⁴

At the Geneva Conference on Disarmament in July 2006 the Governments of the UK, Argentina, Australia, Costa Rica, Finland, Japan and Kenya jointly circulated a draft resolution to be presented to the First Committee of the UN General Assembly in October 2006. That resolution called for a group of governmental experts to be established which would examine the feasibility, scope and parameters of an international arms trade treaty. A subsequent report for the Secretary General to recommend for adoption by the UN General Assembly would then be presented in

³¹ Statement by H.E. Ambassador Cheng Jinye head of the Chinese Delegation at the Meeting of the States Parties to the Convention on certain Conventional Weapons, November 2007 (<http://www.china-un.ch/eng/xwdt/1380352.htm>)

³² Anti-tank mines are not affected by the Convention.

³³ International Campaign for a Ban on Landmines, *Landmine Monitor 2007*

³⁴ Further information on the IATT is available in Library Standard Note, SN/IA/2729, *UK Arms Export Control Policy*.

autumn 2008.³⁵ That draft resolution was discussed by the First Committee in October 2006 and subsequently adopted by a vote of 139 in favour to 1 against (the United States) and with 24 abstentions.

China has opposed the adoption of an IATT and as such was among the countries that abstained in the General Assembly vote. Commenting on the Chinese government's view the summary of discussion in the Assembly stated:

CHENG JINGYE (China), referring to L.55, on the arms trade treaty, said that his delegation was not in support of an arms trade treaty. China was in favour of measures by the international community to address the illicit trade of small arms and believed that the implementation of the 2001 Programme of Action was of great importance. However, the legal trade in arms had the economic interests of all countries at its core and a common standard for international legal instruments was both a complex, and sensitive issue. In-depth discussions were needed; haste and hurried approaches were to be avoided, he added.³⁶

- **Militarisation of Space**

Space has been used for military purposes for several decades. However, that use has been limited to the deployment of non-offensive military systems such as communications and surveillance satellites and has not involved the deployment of 'offensive' space-based weapons. As such, it is generally accepted that the militarisation of space is a reality but not the weaponisation of space.³⁷

The main treaty limiting the use of space for military purposes is the *Outer Space Treaty* of 1967. China has been a Party to that treaty since December 1983 and is also a member of the UN Committee on the Peaceful Uses of Outer Space.³⁸ In the past it has always maintained that space should be used for peaceful purposes and as such has officially been opposed to the weaponisation of space. In its 1998 and 2000 white papers that opposition was clearly set out, with reference in the 1998 paper also being made to China's opposition to the development of anti-missile and anti-satellite capabilities. In June 2006 Ambassador Cheng Jingye also commented at the UN Conference on Disarmament that:

The deployment of weapons in outer space would bring unimaginable consequences. The outer space assets of all countries would be endangered, mankind's peaceful use of outer space threatened, and international peace and security undermined. It is in the interest of all countries to protect humanity from the threat of outer space weapons.³⁹

³⁵ A copy of the draft resolution circulated to the First Committee is available as UN document A/C.1/61/L.55, 12 October 2006

³⁶ <http://www.un.org/News/Press/docs/2006/gadis3335.doc.htm>

³⁷ It is also worth noting that there is no internationally agreed definition of the boundary between the upper atmosphere of earth and outer space, i.e. the point at which space begins.

³⁸ Further information on the UN Committee on the Peaceful Uses of Outer Space is available at: <http://www.unoosa.org/oosa/COPUOS/copuos.html>

³⁹ "Motives and implications behind China's ASAT test", *RUSI Newsbrief*, February 2007

A number of analysts have contended that China's position is solely based on concerns that the US deployment of space-based anti-missile capabilities, as part of its ballistic missile defence architecture, would negate the strategic effect of China's own nuclear deterrent.⁴⁰

In the 2006 white paper, however, references to China's opposition to the weaponisation of space were notably absent and in January 2007 the country conducted its first anti-satellite (ASAT) test.⁴¹

b. Nuclear, Biological, Chemical and Ballistic Missile Agreements

China did not join the 1968 nuclear Non-Proliferation Treaty (NPT) until 1992, having initially denounced the treaty as a US and Soviet conspiracy to maintain their nuclear monopoly. Beijing said it advocated the complete abolition of nuclear weapons and did not encourage nuclear proliferation. It also said that the nuclear powers had no right to prevent non-nuclear states from acquiring nuclear weapons unless they committed themselves to full disarmament, which fuelled suspicions in the West that the Chinese were providing extensive covert support to other aspirant nuclear powers, most notably Pakistan.⁴²

The Chinese position on the NPT began to shift during the 1980s as it joined the International Atomic Energy Agency (IAEA) in 1984 and then became the last of the five recognised nuclear weapon states to accede formally to the Treaty in 1992, shortly after France had acceded. In its statement of accession, China called on all nuclear powers to issue unconditional no-first-use pledges, to issue negative and positive security assurances⁴³ to the non-nuclear weapon states, to support the development of nuclear weapons free zones, to withdraw all nuclear weapons deployed outside national territories, and to halt the arms race in outer space.⁴⁴ China supported the indefinite extension of the NPT at the 1995 Review and Extension Conference, but continues to stress its view that non-proliferation is not an end in itself, but rather a means to the ultimate objective of complete nuclear disarmament.

The Nuclear Threat Initiative (NTI) website offers the following summary of China's participation in the various multi-lateral regimes dedicated to the non-proliferation of chemical, biological, radiological and nuclear weapons:

China is a signatory to the Treaty on the Nonproliferation of Nuclear Weapons (NPT), the Chemical Weapons Convention (CWC), the Biological and Toxin

⁴⁰ Nuclear Threat Initiative, *China's attitude toward outer space weapons*

⁴¹ This is examined in further detail in part IV B.

⁴² For a retrospective look at allegations of Chinese assistance to Pakistan, see *China's Nuclear Exports and Assistance to Pakistan*, NTI website, last updated 14 November 2003

⁴³ Negative security assurances might include an undertaking by a nuclear-weapon state not to use nuclear weapons against non-nuclear-weapon States Parties to the NPT, except under certain circumstances, or to refrain from using nuclear weapons in the various designated nuclear-free zones around the world. By contrast, positive security assurances might include an undertaking to provide immediate assistance to a state threatened with, or subject to, aggression involving nuclear weapons. For background on the issue of security assurances, see 'The Role of Security Assurances: Is Any Progress Possible?', *NTI Issue Brief*, April 2004, http://www.nti.org/e_research/e3_45a.html

⁴⁴ *China Profiles: Arms Control/Nonproliferation Diplomacy*, NTI website, last updated 21 February 2003

Weapons Convention (BWTC), and has joined the Nuclear Suppliers Group (NSG) and the Zangger Committee. Though not members of the following regimes, China maintains a dialogue with and control lists consistent with those of the Australia Group (AG) and the Missile Technology Control Regime (MTCR).⁴⁵

China, along with the other recognised nuclear powers, has maintained a test moratorium since the series of tests in 1995-96 and its subsequent signing of the Comprehensive Test Ban Treaty (CTBT). The treaty itself has yet to enter into force, because a number of states, including China and the US have yet to ratify it.

⁴⁵ [Nuclear Threat Initiative China Profile](#), last updated December 2007

II Chinese Defence Spending

In 2006 the Chinese economy achieved real GDP growth in excess of 9% for the third consecutive year. According to the International Monetary Fund (IMF) that trend was expected to continue in 2007, with real GDP growth forecast to be 10%, and 2008 when it is forecast to be only marginally less at 9.5%.⁴⁶ Unsurprisingly the buoyant economy, teamed with a relatively modest domestic spending programme, has led to consistent and generous increases in military spending. Since the mid 1990s the defence budget has consistently risen by over 10% each year. It is worth noting, however, that as a percentage of GDP, Chinese military expenditure in 2006 was still lower than in the late 1980s/early 1990s. In 2007 official Chinese military spending was set to grow by a further 17.8%, to approximately US\$45bn.⁴⁷

National defence expenditure, China

	Yuan bn	US\$bn ¹	As % of GDP
1989	25.1	6.7	1.5%
1990	29.0	6.1	1.6%
1991	33.0	6.2	1.5%
1992	37.8	6.9	1.4%
1993	42.6	7.4	1.2%
1994	55.1	6.4	1.1%
1995	63.7	7.6	1.0%
1996	72.0	8.6	1.0%
1997	81.3	9.8	1.0%
1998	93.5	11.3	1.1%
1999	107.6	13.0	1.2%
2000	120.8	14.6	1.2%
2001	144.2	17.4	1.3%
2002	170.8	20.6	1.4%
2003	190.8	23.0	1.4%
2004	220.0	26.6	1.4%
2005	247.5	29.9	1.4%
2006	280.0	35.3	1.3%

Note: ¹ Converted using exchange rate published in *The Military Balance*

Sources:

Tables 3.1 & 8.5, China Statistical Yearbook 2006, National

Bureau of Statistics of China

Military Balance, IISS, Various years

However, many analysts have questioned the official figures for the defence budget released by the Chinese government. While acknowledging that official figures provide a useful indication of the trend in defence spending, many have suggested that the defence budget does not accurately reflect the real level of resources being diverted into

⁴⁶ International Monetary Fund, *World Economic Outlook 2007*: <http://www.imf.org/external/pubs/ft/weo/2007/01/index.htm>

⁴⁷ US Department of Defense, *Annual Report to Congress: Military Power of the People's Republic of China*, 2007, p.25. In comparison, the US defence budget for 2007 was \$622bn and the defence budget for the UK was £30bn (*Military Balance 2008*)

the Chinese military. Although estimates vary, most analysts concur that Chinese military spending is between two and three times higher than officially reported. However, in a report in 2005 entitled *Modernizing China's Military: Opportunities and Constraints* RAND argued that real military expenditure is potentially 40 to 70% higher than official estimates.⁴⁸ The Pentagon, in its 2007 report to Congress also estimated that China's total military-related spending for 2007 could be as much as \$85bn - \$125bn.⁴⁹

In support of this position, many analysts have pointed out that if the purchasing power parity methodology⁵⁰ is used to calculate China's defence budget, as opposed to general market exchange rates, then military expenditure is actually significantly higher. As an example, the International Institute for Strategic Studies (IISS) used PPP to calculate Chinese defence spending in 2004 and concluded that when using this methodology the defence budget was actually 1.7 times higher than the official government budget.⁵¹ The US think tank Global Security has also pointed out that "perhaps two thirds of China's expenditures are for items, ranging from salaries to weapons systems that cost a fraction of their equivalent American value".⁵²

In addition, it is widely acknowledged that the Chinese military budget is not transparent and many budgeted functions are hidden in other expenditures; the official budget takes no account of weapons purchased from overseas, which are financed by separate allocations from the State Council;⁵³ and that official figures also do not include funding for paramilitaries, military revenue from other sources of income, such as international arms-related exports, local and regional government contributions and off-budget income from PLA commercial enterprises and defence industries. Included in this latter source of revenue would be research and development funding for new weapons platforms. An assessment by Global Security commented:

Beijing's 2000 White Paper on National Defense and its predecessor editions detail the official PLA budget, but only by poorly defined resource categories and not by service or mission. The release of the White Papers may be an attempt by China to appear to be increasing its military transparency to the West while in reality keeping much secret.⁵⁴

However, the Chinese government has consistently defended its defence expenditure. Following the publication of its 2006 white paper the Chinese government issued a

⁴⁸ RAND Corporation, *Modernizing China's Military: Opportunities and Constraints*, 2005, p.134

⁴⁹ Department of Defense, *Annual Report to Congress: Military Power of the People's Republic of China 2007*, p.25

⁵⁰ PPPs are the rates of currency conversion that equalise the purchasing power of different currencies by eliminating the differences in price levels between countries. In their simplest form, PPPs are price relatives which show the ratio of the prices in national currencies of the same good or service in different countries. PPP dollar values are used in preference to market exchange rates in cases where using such exchange rates may result in excessively low dollar-conversion values for GDP and defence expenditure data. (Source: Explanatory Notes, *The Military Balance 2007*)

⁵¹ See p.341 of *The Military Balance 2007*.

⁵² "China's Defense Budget", *GlobalSecurity.Org*

⁵³ For example, between 2002 and 2006 China imported approximately \$14.6bn in major conventional weapons systems (*SIPRI Yearbook 2007*, p.418)

⁵⁴ Global Security, *China's Defense Budget*

statement outlining its commitment to the principles of transparency in its military affairs. That statement suggested:

Rumours about a bellicose China are fostering an ill-formed fear, or suspicion at best, of the country's military ambitions, though at home and abroad, this nation is advocating harmony [...] part of the recent increase in Chinese military spending is a necessary compensation for the neglect our national defence sectors suffered throughout the 1980s. We cannot afford to see our military capabilities lag further behind as our economic locomotive keeps steaming ahead.⁵⁵

In response to the publication of the Pentagon's report on Chinese military capabilities in 2006, a Chinese Foreign Ministry spokesman also commented:

China is an enormous country with a large border and we have the important task of maintaining territorial integrity and national unity. So it is proper for China to raise military spending and totally normal to push modernization of national defenses.⁵⁶

However, the spokesman went on to denounce the Pentagon's report, criticising the US for a "cold war mentality" and arguing that the report:

deliberately overstates China's military power and expenditure, continues to spread the 'China threat theory' endangers international relations and brashly interferes in China's domestic affairs [...] China cannot accept criticism that its military budget is not transparent. Some people say that China's military budget is not accurate, but I don't know what evidence they have for this.⁵⁷

The Stockholm International Peace Research Institute (SIPRI) has also questioned the Pentagon's assessment and defended China's defence expenditure. Elisabeth Sköns, SIPRI project leader on military expenditure and arms production, has argued:

High and rising Chinese military expenditure reflects China's status as a major regional power and as an emerging world power [...] Its military expenditure accounts for a lower share of GDP than for many other major spenders. While the share of military expenditure in GDP was 2 percent for China in 2005, it was 4.1 percent for both the USA and Russia, 2.7% for the UK and 2 percent for France [...] China is still a developing country with a relatively weak technological and industrial base compared to the major industrial countries. Thus it is important to understand that military expenditure is an input measure indicating the costs rather than the result, or output, in terms of military capability.⁵⁸

In order to ease concerns over transparency the Chinese government announced in September 2007 that it would declare its annual defence spending to the UN Office for Disarmament Affairs (ODA). However, most analysts have been unanimous in their

⁵⁵ Statement on Military Transparency, 31 December 2006:
<http://www.china.org.cn/english/China/194765.htm>

⁵⁶ "China slams criticism of military expansion", *Reuters*, 25 May 2006

⁵⁷ ibid

⁵⁸ "SIPRI report on China disputes US findings", *Defense News*, 18 June 2007

reaction to the announcement, expressing doubts over the likelihood of China declaring all of its defence expenditures in so stark a contrast to the longstanding practice of keeping almost all defence matters secret.⁵⁹ Indeed, as an article in *Strategic Comments* in December 2007 pointed out:

At the time of its announcement Beijing was keen to present the move as evidence that it was seeking to be more transparent about its defence spending. However, the data published by the ODA in the 2007 report was no more detailed than that already available in the Chinese biennial publication 'White Paper on China's National Defence'. Whereas the UN's standardised reporting format includes five main category headings [...] which are subsequently broken down into more detailed categories, the data China supplied to the UN and published in its White Paper is grouped under just three headings: Personnel, Training and Maintenance, and Equipment. No further breakdowns are provided and, given that several elements of military spending are known to have been omitted from the official budget, this submission to the UN regime sheds no further light on the issue of China's true military expenditure.⁶⁰

The overriding conclusion therefore is that there is no definitive figure for Chinese military expenditure. Yet despite this uncertainty the Pentagon maintains that, at present, China's defence budget is the second largest in the world behind the US,⁶¹ and the largest in the Asian region.⁶²

⁵⁹ "China to declare defense spending, arms sales to UN", *Defence Aerospace*, 3 September 2007

⁶⁰ "Chinese defence expenditure: calculating its true extent", *Strategic Comments*, December 2007

⁶¹ The US defence budget for 2007 was \$622bn (*Military Balance 2008*)

⁶² Department of Defense, *Annual Report to Congress: Military Power of the People's Republic of China 2007*

III China's Military Capabilities

A. Conventional Capabilities⁶³

As highlighted by its white paper conclusions, China's main pre-occupations are first and foremost with internal security, its regional neighbours and in maintaining its strategic position within the balance of power in Asia. This is subsequently reflected in the configuration of China's conventional military forces. Its forces are extensive, consisting of approximately 2.1 million active personnel, 1.5 million paramilitary forces and a further 800,000 reserves. Land and air forces are largely structured for territorial defence and only limited regional offensives, potentially against Taiwan. Paramilitary forces are configured for maintaining internal security and border defence; while China's significant surface and tactical submarine fleet is also deployed with offensive military contingencies across the Taiwan Strait in mind. The Navy's current lack of aircraft carriers severely limits its expeditionary capability. It also has no overseas bases and no forces permanently based in other countries. As such China's ability to project military power beyond its immediate sphere of influence is limited to its nuclear capabilities and requisite delivery systems. These are examined in part III B.

China's pre-occupation with the regional balance of power has also had an impact on the development of its indigenous defence industrial base. Although China's military-industrial complex is vast, since the late 1940s it has been a centralised, state-owned operation beset by inefficient practices and with investment largely channelled into those niche capabilities considered a priority for maintaining regional influence and any potential offensive against Taiwan. China's missile industry was, for example, one such niche. Even then the industrial success of those prioritised sectors has varied. As Shun Zhenhuan points out in his discussion of the Chinese defence industry for the US Institute for National Strategic Studies:

Under the circumstances of a weak economic base, then, this system played an important role in concentrating abilities on those priority projects in the defense industry [...]

China devoted major efforts to developing the A-bomb, the H-bomb, satellites, and nuclear-powered submarines with limited funds and an inadequate technical force. While some areas in the defense industry came up to advanced world standards, much of our general mode of production lagged. Shortcomings such as high consumption, high cost, inefficiency, and low quality were present everywhere, and some advanced defense technologies were set aside for years.⁶⁴

In order to make up for this domestic shortfall, since the 1950s the Soviet Union, and now Russia, has traditionally been China's main source of military technology and

⁶³ Order of Battle information with respect to the Chinese armed forces is not readily available. Therefore, estimates vary among commentators. For the sake of consistency, the manpower and asset figures provided in this chapter are taken from the International Institute for Strategic Studies, *Military Balance 2008*.

⁶⁴ A copy of this article is available at: <http://www.fas.org/nuke/guide/china/doctrine/zhenhuan.htm>

military assistance.⁶⁵ That relationship was strengthened after the Tiananmen Square massacre in 1989 when the US and EU unilaterally imposed arms embargoes on China, both of which remain in force.⁶⁶ Between 2002 and 2006, therefore, China accounted for 45% of Russia's military exports.⁶⁷ On a more general level SIPRI has estimated that China was the largest recipient of international transfers of major conventional weapons in the world during the same period, importing an estimated \$14.6bn worth of equipment.⁶⁸ Consequently the majority of China's current assets have either been procured directly from the Soviet Union or Russia; have been built under licence in China or are second and third generation capabilities that have been reverse-engineered from original Soviet and Russian designs.⁶⁹

In the last few years China has, however, been attempting to reduce its reliance on foreign military imports and shore up the capabilities and competitiveness of its own domestic manufacturing base. The government's main motivation is to meet the future manufacturing requirements of the PLA indigenously. A secondary objective has been to improve China's share of the global defence market. China's relationship with Russia has been particularly instrumental in the level of success achieved thus far as technology transfer from foreign purchases and licensed production agreements have allowed the defence industry to advance its own knowledge and skills base, particularly through the process of reverse engineering.⁷⁰ In addition, significant private investment, some rationalisation of state-owned enterprises, measures to stamp out corruption and inefficiency in the defence procurement process, and the introduction of liberal working practices, including open contract bidding, have improved the efficiency and quality of indigenous defence products. In June 2007 the Chinese state media also reported that the Chinese government would, in the future, allow foreign private investment in certain areas of the defence sector as part of broader plans for shareholder reform.⁷¹ Although those reforms will not apply directly to key military enterprises that design and manufacture major weapons systems or have a direct impact on national security, those companies are nonetheless likely to indirectly benefit from reforms introduced both lower down the supply chain and in the commercial sector, particularly with respect to dual-use

⁶⁵ China has also procured military-related items from Ukraine and Israel. On occasion China has also procured dual-use goods such as diesel engines from France and Germany. Such items are not explicitly covered by the EU arms embargo.

⁶⁶ In the absence of a UN arms embargo Russia was subsequently able to continue assisting China with advanced weapons procurement. A discussion of the EU-China arms embargo is set out in Library Research Paper RP06/36, *A Political and Economic Introduction to China*.

⁶⁷ SIPRI Yearbook 2007, p.392

⁶⁸ This figure is expressed as a trend indicator value (TIV) in 1990 constant prices (SIPRI Yearbook 2007, p418). TIV is used by SIPRI to show the quantity and quality of the weapons that are being transferred (similar weapons are assigned similar values) and does not reflect the actual financial value. A fuller explanation of TIV is available on p.429 of the SIPRI Yearbook 2007.

⁶⁹ China's relaxed approach to intellectual property rights has been strongly criticised by some commentators, although assistance and technology transfer from countries like Russia has continued.

⁷⁰ Reverse engineering involves disassembling an item, analysing its technology and component parts and then manufacturing a copy. More simply it has been referred to as 'going backwards through the development cycle'.

⁷¹ Those reforms include allowing both domestic and foreign companies to invest in Chinese firms, the gradual adoption of boards of directors and allowing defence-related companies to raise funds on both the domestic and foreign capital markets. However, these reforms will be confined to those firms that produce less important or sensitive military equipment and products for broader civil and defence markets.

technologies that could have military applications.⁷² The potential transfer of knowledge and skills gained in China's commercial aviation sector for example, has been raised as a concern.⁷³

Despite the progress that has been achieved so far in improving China's defence industries, China's dependency on overseas military suppliers is considered likely to continue for the foreseeable future.⁷⁴ China's military modernisation plans for the next 20 years, for example, envisage the procurement of a range of technologically advanced weaponry that are arguably way beyond the capabilities of China's existing domestic manufacturing base. As RAND noted in its 2005 report *Modernizing China's Military*:

As with most aspects of modernization in China, reform of the defense industry has been uneven. We find that in each of these sectors [aviation, shipbuilding, information technology and defence electronics, and missiles] the capabilities of manufacturers to design and produce key systems are improving, but weaknesses and limitations persist. Some sectors have been more successful than others: Improvements in information technology and shipbuilding have been very impressive whereas aviation has lagged.⁷⁵

Yet there is also some debate as to whether China will continue to enjoy exactly the same level of access to advanced technologies in the future, including Russian-sourced capabilities. As RAND has noted:

Western countries, with some exceptions, are not willing to transfer technologies to China that have direct military applications. Few, if any, foreign companies are willing to provide China with their most advanced "core" technologies, although Russian and Israeli companies appear to be willing to provide China with some advanced military technologies that U.S. or French companies would not.

However the report went on to state:

It is unclear whether the Russian aviation industry, one of China's key suppliers, will have the technological capability and resources to create and manufacture significantly more sophisticated designs in the future.⁷⁶

Indeed the Russian newspaper *Nezavisimaya Gazeta* reported at the end of January 2008 that the Russian government was currently undecided about what type of future technologies China should have access to. According to that article "the main issue is

⁷² See "China draws up industry reforms in bid to raise competitiveness", *Jane's Defence Weekly*, 4 July 2007. An excellent summary of China's defence industry is also set out in the RAND report, *Modernising China's Military: Opportunities and Constraints*, 2005

⁷³ See "China's defense industry benefits from foreign commercial deals", *Defense News*, 16 July 2007

⁷⁴ It has been suggested that China is also looking to procure advanced weaponry from other suppliers, including several European countries and as a result has been pressuring the EU to lift the EU-China arms embargo.

⁷⁵ RAND, *Modernizing China's Military: Opportunities and Constraints*, 2005, p.175-6

⁷⁶ *ibid*

indecision over which technology can safely be sold to China, as well as Beijing's desire to receive licences to do the work itself".⁷⁷

Were Russian attitudes to exporting advanced technologies to China to change in the future, China may subsequently find itself in somewhat of a dilemma. Access to Western technologies is currently limited and its domestic manufacturing base continues to fall short. Efforts by China to diversify its suppliers by opening up the European market could consequently result in greater diplomatic pressure being put on EU member States to abolish the EU-China arms embargo that was imposed in 1989.⁷⁸

1. People's Liberation Army Ground Forces

The PLA Ground Force is extensive in terms of both manpower and capabilities. It consists of 800,000 regular personnel in addition to 800,000 conscripts, although reductions in the number of conscripted personnel continue to be made.⁷⁹ Total ground forces account for 76% of the whole of the armed forces.

Land forces are configured for territorial defence, internal order, border and coastal security and limited forays into the region, potentially against Taiwan. Those forces are organised into 18 group armies (GA), each with a manpower strength of between 30,000 and 65,000 personnel. The structure, size and combat readiness of those GA varies according to its role and geographical location.⁸⁰ The 18 GA are organised among the seven regional military commands.⁸¹

Infantry, armour, artillery and missile units are also organised into a combination of divisions and brigades⁸² which are deployed throughout the seven military commands. In addition the PLA has a number of forces configured specifically for border and coastal security, more specialist roles such as mountain combat, aviation and logistics support such as engineering and signals. In reserve there are approximately 30 infantry divisions, each with three infantry and one artillery regiment, 12 air defence divisions and seven logistics support brigades.

The Pentagon has estimated that 400,000 personnel are currently deployed in the Taiwan Strait area, and specifically in the Nanjing, Guangzhou, and Jinan military regions.⁸³ This equates to approximately 19% of China's overall ground forces. The Pentagon's latest assessment of deployed ground forces is as follows:

⁷⁷ "Russian arms exports to China in collapse: report", reported by *Agence France Presse*, 29 January 2008

⁷⁸ China has periodically attempted to persuade the EU to abolish the arms embargo, arguing that it serves as an obstacle to further rapprochement between the EU and China. France has been most vocal supporter of abolishing the arms embargo among the EU's member states and has indicated that it intends to raise this issue again during its Presidency of the EU in the latter half of 2008.

⁷⁹ Military service is compulsory for male citizens for a period of two years from the age of 18. Individuals remain eligible for enlistment until the age of 22. Female citizens may also be enlisted if necessary.

⁸⁰ Ten of those GA are considered to have category A combat readiness (in excess of 80% manpower strength and capable of deploying without augmentation and training).

⁸¹ A list of Chinese army bases is available at: <http://www.globalsecurity.org/military/world/china/army-fac.htm>

⁸² A division is estimated as 10-15,000 personnel, while a brigade constitutes 3-5,000 personnel.

⁸³ US Department of Defense, *Military Power of the People's Republic of China*, 2007



Due to decades of reliance on the Soviet Union for its military capabilities, most of the PLA's current ground force capabilities are second or even third generation domestically manufactured technologies, based on original Soviet designs from the 1950s, 60s and 70s. Overall the PLA deploys approximately 7,660 main battle tanks (MBT) (largely T-59, T-79, T-88, T-96 and T-99), 1,000 light tanks (Type 62-I and Type 63A), 3,500 armoured vehicles (variants of the Type 63, T-77, T-89 and WZ-523) and in excess of 17,700 artillery pieces. Of significance was the first delivery in 2006 of the Type-99 (ZTZ-99) MBT to the PLA's elite armoured divisions in the Beijing and Shenyang military regions. The PLA's aviation regiments are also equipped with a range of attack (Z-9), assault (Gazelle), support and utility (Z-11) helicopters and an unspecified number of unmanned aerial vehicles (UAV). The PLA is also currently flight testing the Z-10 attack helicopter, which is China's first indigenously produced helicopter of this type and is expected to enter service in 2008 or 2009.⁸⁴

The upgrade and modernisation of land forces with the T-99 MBT and Z-10 attack helicopter, particularly those deployed in the three military commands closest to Taiwan, is expected to continue. How far modernisation of the PLA's ground forces will extend beyond these new capabilities, however, is the subject of some debate. The 2006 white

⁸⁴ The Z-10 is believed to be in the same class as the Eurocopter Tiger attack helicopter.

paper, for example, put emphasis on developing trans-regional mobility and rapid assault capabilities, as opposed to those configured for territorial/regional defence. In addition PLA modernisation funding has, thus far, been largely channelled into the navy and the air force.⁸⁵ An article in *Jane's Defence Weekly* in April 2007 commented:

The PLA ground forces are making steady if painstakingly slow progress to recapitalise their combat capabilities in the face of limited acquisition funds and sharply rising personnel welfare costs. Consequently, army chiefs have held back on undertaking an extensive army-wide rearmament effort and are instead concentrating on incremental improvements in selected areas, such as the development of special operations forces and beefing up dedicated amphibious and army aviation units.⁸⁶

2. People's Liberation Army Navy (PLAN)

Although not on a par with the manpower strength of the PLA's ground forces, the personnel strength of the PLAN is still considerable. It consists of 215,000 personnel, 40,000 of whom are conscripts and includes 26,000 naval aviation personnel and 10,000 marines.

The Navy is divided into three fleets, each covering a specific geographic region and consisting of a number of surface ship, submarine, naval air force, coastal defence, and marine units:

- **North Sea Fleet** – operates in the Yellow Sea and seaward and largely in line with the coastal defence of the Shenyang, Beijing and Jinan military regions. The naval headquarters of the fleet is based at Qingdao, which is also a major naval base for both the surface and nuclear submarine fleet and a naval dockyard capable of undertaking repairs on any class of vessel in the Chinese fleet. Major naval bases are also located at Lushun and at Xiaopingdao.⁸⁷ The Lushun naval base in particular is considered to be of strategic importance, primarily because of its location⁸⁸ but also the fact that it is the home base of some of the navy's most advanced submarine and surface fleet capabilities. The primary tasks of the fleet are protecting China's northern coasts and the capital Beijing. In the event of an offensive against Taiwan the fleet could provide critical support capabilities to the other two fleets.
- **East Sea Fleet** – operates in the most southern parts of the Yellow Sea and the East China Sea and seaward and equates to the coastal defence of Nanjing military region. The naval HQ is based at Ningbo⁸⁹ which is largely a commercial sea port, although the Zoushan naval base is adjacent. Other major naval bases

⁸⁵ This is examined in more detail in part V.

⁸⁶ "Marching forward", *Jane's Defence Weekly*, 25 April 2007

⁸⁷ The Lushun and Xiaopingdao bases are often referred to within the context of the Dalian shipyard and the Bohai shipyard at Huludao as they are all in close geographical proximity.

⁸⁸ The base is at the south west corner of the Kuan-tung peninsula facing Korea Bay and overlooking the entrance to the Bohai Straits which is considered the "doorway" to Beijing and the major industrial ports in the Bohai Sea.

⁸⁹ Also referred to as Dongqian Lake.

of the fleet are located at Shanghai and Fujian. The principal mission of the East Sea Fleet would be a key role in any offensive against Taiwan.

- **South Sea Fleet** – operates in the South China Sea, including the Paracel and Spratley Islands⁹⁰ and seaward and has responsibility for the coastal defence of Guangzhou military region. The naval HQ is based at Zhanjiang⁹¹ which is also a major naval base incorporating most of the surface fleet of the South Sea Fleet. Major bases are also located at Yulin (one of China's three major submarine bases) and Guangzhou. As with the East Sea Fleet, the principal mission of the fleet would be in any amphibious offensive against Taiwan.

From a capabilities perspective the PLAN has a significant surface and tactical submarine fleet, both of which have been the subject of significant investment and modernisation in the last few years to turn it from a largely coastal force into a truly 'blue water' navy.⁹² Overall the surface fleet currently comprises 75 principal surface combatants. Of these 29 are destroyers, principally variants of the Luda-class which entered service between 1971 and 1991.⁹³ In the last few years, however, investment in the surface fleet has seen the introduction of several, more advanced, destroyer capabilities. Specifically the PLAN has been augmented by two Guangzhou-class multi-role destroyers which entered service in 2004;⁹⁴ four Sovremenny-class destroyers equipped with SS-N-22 Sunburn anti-ship cruise missiles⁹⁵ which have entered service since 2002; two Lanzhou-class;⁹⁶ and the newest ships of the fleet: two Luzhou-class, the first of which was launched in 2005. All four classes of vessel have introduced greater stealth, advanced weaponry and vastly improved air defence capabilities, areas that had been considered major weaknesses in previous Chinese warships as they imposed geographical limitations on the activities of the fleet. The deployment of the Luzhou-class destroyer reportedly equipped with the Russian SA-N-20 surface-to-air missile system, which has a range of approximately 150km, for example, more than doubles the range of previous PLAN air defence systems.

In addition to its destroyer fleet, the PLAN also includes 46 frigates. Primarily comprised of variants of the Jianghu-class⁹⁷ the fleet has benefited from recent additions: the Jiangwei-I and II classes (four and 10 vessels respectively) and two vessels of the Jiangkai-class, which only began entering service in 2007 and is the PLAN's first guided-missile frigate. As with the newly acquired destroyers, these latter classes of frigate have

⁹⁰ China has been engaged in a longstanding territorial dispute with Taiwan, Vietnam, Malaysia and the Philippines over the Spratly Islands and with Taiwan and Vietnam over the Paracel Islands.

⁹¹ The naval HQ of the South Sea Fleet was originally based at Guangzhou.

⁹² 'Blue water' is a term used in maritime geography to refer to the deep waters of the open ocean. A 'blue water force' has the ability to project naval force across the open ocean.

⁹³ This class of destroyer is expected to be phased out of service by 2020.

⁹⁴ Also referred to by its NATO designation: the Luyang I-class.

⁹⁵ The Sovremenny-class destroyer is one of the principal anti-surface warship's of the Russian Navy. The first two vessels in the PLAN fleet were procured from Russia in December 1996 and entered service by 2002. In January 2002 Russia and China signed a \$1.4bn contract for a further two, modified, Sovremenny II-class destroyers which China took receipt of in 2006. China also reportedly has the option to procure a further two Sovremenny-class in the future (Global Security)

⁹⁶ Also referred to by its NATO designation: the Luyang II class. The first vessel of this class was reportedly constructed in 10 months and commissioned within 25 (*Armed Forces Journal*, April 2006)

⁹⁷ There are five variants of the Jianghu-class in service with the PLAN.

provided the PLAN's surface fleet with significantly improved air defence capabilities. The PLAN also has 233 patrol and coastal combatants including 63 fast patrol craft equipped with surface-to-surface missiles; 65 mine warfare vessels; approximately 234 amphibious landing ships of various designations, including 74 medium and heavy landing ships; and 160 logistic and transport vessels. In September 2007 sea trials of the new Type-71 Yuzhao-class amphibious landing platform dock began. Although it is unclear when the ship will enter operational service, it is widely acknowledged that it will represent a major improvement in the PLAN's ability to support amphibious operations.⁹⁸

According to the Pentagon's 2007 assessment of China's military power, approximately 64% of the destroyer fleet and 85% of the PLAN's frigates are deployed in the East and South Sea Fleets for use in any potential offensive operation across the Taiwan Strait.

The conventional submarine fleet comprises 59 tactical subs, including its ageing Ming and Romeo-class vessels; four Han-class nuclear powered attack submarines; 12 Kilo-class (the newest of which are equipped with SS-N-27B anti-ship cruise missiles and could possibly be equipped with the 3M-14 land-attack cruise missile (LACM));⁹⁹ 10 Song-class and two Yuan-class patrol submarines. The latter is the newest class of diesel-electric submarine to enter service in the PLAN and are currently undergoing sea trials. Two vessels of the second generation Shang-class nuclear-powered attack submarine, which is earmarked to replace the Han-class, also entered service in 2007. The new Shang-class submarine is also thought to have been deployed with an LACM capability.¹⁰⁰ The Kilo, Yuan and Shang classes of vessel are all considered to constitute major technological advancements over previous generations of submarine and particularly in relation to stealth, sonar, propulsion, command and control, and weapon systems, most of which are advanced capabilities procured from Russia. In contrast to the surface fleet, less than half of the submarine fleet is reportedly deployed in the East and South China Seas, while the SSBN and nuclear powered vessels are located in the North.

The PLAN also has a sizeable naval aviation arm which consists of 792 combat capable aircraft deployed among the HQ of each sea fleet (see table on page 36). Of those aircraft, 346 are fighter interceptor aircraft (J-8 Finback variants and J-7/MiG-21F); 296 are ground attack aircraft (JH-7, Su 30-Mk2 and J-6/MiG 19S), in addition to 130 bomber aircraft (H-5 and H-6) and a number of reconnaissance, maritime patrol, tanker and transport aircraft. The naval aviation arm also operates a number of anti-surface warfare, support and search and rescue helicopters.

⁹⁸ "China's Navy", *Strategic Comments*, January 2008

⁹⁹ The last two Kilo-class submarines were delivered in late 2007.

¹⁰⁰ Statement to the US-China Economic Security Review Commission, 29 March 2007: (http://www.uscc.gov/hearings/2007hearings/written_testimonies/07_03_29_30wts/07_03_29_30_cooper_statement.php)

The Pentagon's determination of the current deployment of China's naval fleet is set out as follows:



Source: US Department of Defense

The majority of China's major combat ships have been constructed domestically,¹⁰¹ albeit with considerable assistance from Russia and equipped with imported key technologies, including sonar, propulsion technologies, and air defence systems.¹⁰² The only major exceptions to this domestic procurement approach in the last few years has been the Kilo-class submarine and the Sovremenny-class destroyer, both of which were purchased directly from Russia. Despite claims to the contrary Russia has, however, denied assisting China with the construction of its new Jin-class SSBN.¹⁰³

China's nuclear-powered attack and ballistic missile submarines are built at the Bohai/Huladao shipyard on the coast of the Bohai Gulf in close geographical proximity to the Dalian shipyards and the Lushun and Xiaopingdao naval bases. China's

¹⁰¹ According to Lloyd's Register for 2006 China's shipbuilding sector was the third largest in the world, surpassed only by South Korea and Japan. In 2004 its annual output was 8.8 million DWT, which was predicted to exceed 10 million in 2006.

¹⁰² Diesel engines for the song-class submarine were, for example, procured from Germany between 2002 and 2006. These engines would be considered dual-use capabilities and therefore not in contravention of the EU-China arms embargo.

¹⁰³ Nuclear Threat Initiative: <http://www.nti.org/db/china/wsubdat.htm>. The Jin-class submarine is examined in greater detail in part III C.

conventional submarines, in contrast, have been largely constructed at the Wuhan shipyard in Hubei Province in inland China, although in 2003 construction of the Song-class submarine also began at a second conventional submarine yard at the Jiangnan Shipyards in Shanghai. An article in the *Armed Forces Journal* in March 2006 pointed out that between 2002 and mid 2005 the PLAN procured 14 submarines.¹⁰⁴ On that basis the article suggested that if this rate is sustained then China could produce and/or purchase about 40 new submarines by the end of this decade.¹⁰⁵

China's major surface combatants are predominantly constructed at shipyards in Dalian, Shanghai,¹⁰⁶ and Guangzhou.¹⁰⁷ Over the last 20 years an extensive programme of expansion has been undertaken at Dalian, which now consists of two shipyards and is the main focus of China's naval modernisation shipbuilding programme, reportedly incurring investment of \$1.25bn per year and responsible for around 25% of ship production in China. By 2015 China's shipbuilding capacity is forecast to exceed 50 million deadweight tons (DWT),¹⁰⁸ a rate of expansion which has raised concerns among several analysts given the naval focus of much of the PLA's modernisation plans. Indeed it has been suggested that future extensions of the fleet could, by 2010, provide the PLAN with a naval area denial capability up to 400 miles from its eastern and southern coastlines.¹⁰⁹

Despite the extensive capabilities of the PLAN, the recent attempts to modernise the fleet and the capacity of the domestic manufacturing base to support it, analysts have continued to question the credibility and effectiveness of the Chinese navy. Many, including the Pentagon, consider it largely untested in the skills of modern naval warfare.¹¹⁰ The PLAN also continues to lack key capabilities. The fleet's expeditionary capability is currently limited by the lack of any aircraft carriers;¹¹¹ while the manufacture of many of the PLAN's newest acquisitions has relied heavily on the import of key foreign technologies including power plants, navigation and key weapons systems. As RAND point out in their report:

This high degree of reliance on foreign subsystems creates challenges for systems integration and complicates serial production of some platforms because of the potentially uncertain availability of certain subsystems [...]

¹⁰⁴ Including its newest Jin-class ballistic missile submarines (see part III C3).

¹⁰⁵ "China's submarines pose regional, strategic challenges", *Armed Forces Journal*, March 2006

¹⁰⁶ There are several shipyards in Shanghai, including the Jiangnan shipyard (current production rate of 800,000 DWT), the Hudong shipyard, the Zhonghua shipyard and the Shanghai Shipyard. The latter shipyard has a production rate of 165,000 DWT annually which has been equated to approximately 6 ships, although this would depend on the nature of the vessel. (Global security).

¹⁰⁷ Since 1993 the Guangzhou shipyard has had an annual average output of 10 vessels per year (Global Security)

¹⁰⁸ Innovation Norway, *The China Maritime Industry*, December 2005 (revised for the internet 2006).

¹⁰⁹ "The People's Liberation Army's mandate of heaven", *RUSI Newsbrief*, June 2007

¹¹⁰ The PLAN is increasingly participating in naval exercises with both its regional neighbours and other nations in an attempt to increase the interoperability, operational doctrine and professionalism of the PLAN (examined in part IV A). However, the US has contended that, despite this extensive naval exercises programme, the PLAN is still lacking in experience of actual joint operations.

¹¹¹ China has taken steps in the last few years to address this particular capability gap. This issue is examined in further detail in part IV B.

In short, Chinese shipbuilders have been able to produce better designed and better-fabricated warships in less time than previously, but these new platforms lack the advanced weapons, electronics, and propulsion subsystems needed to properly outfit these vessels. It is these technologies (and their integration) that will ultimately determine the PLAN's military efficacy.¹¹²

3. People's Liberation Army Air Force (PLAAF)

The Chinese Air Force comprises approximately 250,000 personnel. Conscripts make up approximately 37% of the total force, although in line with the PLA's overall policies on conscription that proportion is being steadily reduced.

From an equipment perspective, the PLAAF has approximately 1,762 combat capable aircraft in its inventory.¹¹³ Of those aircraft, 1,179 are fighter/interceptor aircraft, largely variants of the J-7 and J-8 aircraft¹¹⁴ which entered service in the 1970s and 1980s, although the most recent variant of the J-7, the J-7G only entered service with the PLAAF in 2003; and the Su-27 SK/J-11B.¹¹⁵ Since 2004 the PLAAF has also augmented its fleet with the introduction of the J-10,¹¹⁶ a multi-role fighter with sophisticated avionics and more advanced weaponry which has been considered the first Chinese-developed fighter aircraft to meet the performance and capabilities benchmark provided by Western fighter aircraft.¹¹⁷ The third regiment to have received the J-10 was identified in 2007 under the 2nd Air Division in Guangdong Province. Some analysts have suggested that the PLAAF will have acquired 300 J-10 aircraft by 2010,¹¹⁸ although US Defence Intelligence has reportedly estimated the PLAAF's overall J-10 requirement to be up to 1,200 aircraft.¹¹⁹

At present it is unclear whether the PLAAF will acquire the JF-17/FC-1 multi-role fighter that China is currently developing in conjunction with Pakistan and which entered serial production in 2007. The aircraft is considered a less capable, albeit less expensive aircraft compared to some of the aircraft that China is currently procuring, including the J-10. China has also reportedly begun development on its fourth-generation fighter, the J-X (or J-XX/J-14). China's fighter/interceptor aircraft are equipped with AA-12, P-27/AA-10, P-37/AA-11, PL-2B, PL-5B and PL-8 air-to-air missiles, in addition to the new PL-12 beyond-visual-range-air-to-air-missile (BVRAAM) which is deployed on the J-10 and J-11B aircraft.

In addition to its interceptor aircraft, the PLAAF also has 551 ground attack (FGA) aircraft. The FGA fleet consists primarily of the Q5-C and Q5-D aircraft, although since the 1990s significant capability improvements to the fleet have been made with the

¹¹² RAND, *Modernizing China's Military: Opportunities and Constraints*, 2005

¹¹³ Excluding the aircraft capabilities of the naval aviation arm, which are set out in part III A2.

¹¹⁴ Also referred to by their NATO designations: Fishbed and Finback.

¹¹⁵ The PLAAF has acquired three batches of Su-27 SK, totalling 76 aircraft from Russia since 1992. It is also manufactured under licence in China as the J-11B.

¹¹⁶ Also referred to as the F-10.

¹¹⁷ At present the J-10 incorporates a Russian turbofan power plant, although an indigenous turbofan engine, the WS-10, is expected to become the principal engine in the J-10 in future variants.

¹¹⁸ Sino Defence: <http://www.sinodefence.com/airforce/fighter/j10.asp>

¹¹⁹ "Marching forward", *Jane's Defence Weekly*, 25 April 2007

addition of the JH-7, the improved JH-7A variant which entered service in late 2004, and the Su-30 MKK. Aircraft are equipped with AS-14, AS-17 and AS-18 air-to-surface missiles. The Q5 is also believed to be nuclear capable.¹²⁰

The PLAAF's bomber divisions consist of approximately 82 aircraft comprising the H-6 and more recent upgraded variants of that aircraft including the H-6E/ F and H. The newest variants of the H-6 have recently been equipped with the YJ-63 which is the air force's first air-launched land-attack cruise missile (LACM).¹²¹ Up to 20 H-6 bomber aircraft are believed to be nuclear-ready.¹²² Supplementing the PLAAF's fast jet and bomber aircraft are 183 reconnaissance (the ageing MiG-19 and MiG-21 and the JZ-6 and JZ-8) and airborne early warning aircraft; an unspecified number of UAV; 314 tanker and transport aircraft and in excess of 522 training aircraft. The PLAAF also has a small support and utility helicopter fleet. In order to supplement and modernise its airborne early warning fleet, the PLAAF is currently developing a number of AEW platforms including the KJ-200 which is based on the Y-8 transport aircraft and is being configured for an AEW role as well as intelligence and maritime surveillance; and the KJ-2000 airborne warning and control system which is based on the Russian A-50 AWACS aircraft.

Overall these forces are organised into 32 air divisions (22 fighter, 3 bomber, 5 attack and 2 transport divisions)¹²³ and are deployed among the PLA's seven military commands. The majority of forces are, however, located in the eastern part of the country, a reflection of the priority given to any potential offensive against Taiwan.

The exact nature of the infrastructure supporting PLAAF operations is, however, the subject of debate. According to the Federation of American Scientists those 32 divisions are located across 37 military air bases and four airfields which may be capable of supporting both civilian and military operations. Six of those airbases are considered to be within short range of Taiwan (<400km); whilst 11 are within medium range (400-600km).¹²⁴ The organisation Global Security has suggested, however, that the number of Chinese air bases or airfields/airports capable of supporting military operations is in the region of 150.¹²⁵

The PLAAF also has a dedicated air defence force equipped over 1,578 surface-to-air missiles.

¹²⁰ See part III C.

¹²¹ The YJ-63 has a range of 400-500km.

¹²² See part IIIC.

¹²³ Estimates of the number of forces within a division varies. The IISS for example suggests that each division roughly comprises four regiments each with 10-15 aircraft, a maintenance unit and a number of transport and training aircraft. The Federation of American Scientists has provided slightly higher estimates, suggesting that each air division would have approximately 17,000 personnel in three regiments and between 75 and 125 fighter aircraft or 70 to 90 bombers including maintenance spares.

¹²⁴ A full list of those air bases and airfields is available at:

<http://www.fas.org/nuke/guide/china/facility/airfield.htm>

¹²⁵ <http://www.globalsecurity.org/military/world/china/airbase.htm>

The Pentagon's 2007 report set out the deployment of China's air forces as follows:



Source: US Department of Defense

The manufacture of most of China's combat aircraft has been undertaken domestically. However, China's aviation industry has its limitations, particularly its ability to successfully manufacture Turbofan engines for its combat and heavy aircraft. Like most of China's naval vessels, therefore, China's air forces have benefited significantly from the incorporation of foreign technology and other assistance, particularly from the Soviet Union/Russia.

A significant number of Soviet and Russian fighter aircraft have, for example been reverse engineered by Chinese industry over the years (with varying degrees of success) and then upgraded into second and third generation variants. The J-7 was, for example, initially copied from the Soviet MiG-21 and then upgraded domestically. More recently China has also indicated that it will attempt to reverse engineer the Russian turbofan engine which has been incorporated into its J-10 for use in future variants of the aircraft.¹²⁶ China's H-6 bomber is also a domestic copy of the Russian Tupolev Tu-16,

¹²⁶ Israel has also been linked with the J-10 programme. The J10 aircraft design has been considered by many analysts to be largely based on the cancelled Israeli 'Lavi' fighter programme(which in itself was based on American F-16 technology (see RAND, *Modernizing China's Military: Opportunities and Constraints*, 2005)

while its HY-6 tanker aircraft is a copy of a converted Tu-16. The majority of China's transport aircraft are also based on the Antonov AN-2 (Y-5), the AN-12 (Y-8), the AN-24 (Y-7) and the AN-26 (Y-7H).

China has also established a number of licensed production agreements with Russia including an agreement for the domestic production of the Su-27Sk/J-11B aircraft. On occasion China has also directly purchased aircraft from overseas in order to supplement its fleet. The PLAAF operates, for example, several variants of the Il-76 transport aircraft purchased from the Soviet Union and Russia in the 1990s. In 2005 China ordered a further 38 Il-76MD long-range transport aircraft and Il-78 tanker-transport aircraft from Russia in a deal reportedly worth \$1bn.

China has also taken a similar procurement approach to some, although not all of the PLAAF's missile capabilities. The PL-2B and PL-5B missiles, for example, are upgraded versions of the PL-2 which was produced under licence in China and based on the Soviet K-13 air-to-air missile.¹²⁷ China also acquired a number of its missile technologies from Israel during the 1980s, including the PL-8 which is produced under licence and based upon the Israeli Python-3 air-to-air missile. Israel has also been an important source of unmanned aerial vehicle (UAV) and unmanned combat aerial vehicle (UCAV) technologies.¹²⁸

Despite improvements in China's aviation industry it has been pointed out that even with the potential indigenous production of a fourth generation fighter aircraft, China will still be a generation behind the technological capabilities of the US.¹²⁹

4. People's Armed Police (Paramilitary Forces)

The People's Armed Police, in its current configuration, was established in the 1980s following a decision by the Chinese government to re-establish a dedicated force for internal security and law enforcement purposes.¹³⁰ The force comprises 1.5 million active personnel broken down into 45 divisions and deployed across China's 22 provinces and four autonomous regions.

During peacetime, the PAP is responsible for guarding key targets, including personnel and key economic and industrial installations; dealing with emergency crises including riots, insurgency and other mass incidents; anti-terrorism, including anti-hijacking and bomb disposal; and assisting in the economic development of the country, including mining and taking part in large transportation and energy construction projects. In a situation of conflict the PAP could also be used for the purposes of territorial defence and in support of regular ground forces.

¹²⁷ The K-13 was itself reverse engineered by the Soviets from an American Sidewinder missile that been acquired when a missile fired at a Chinese MiG-17 by a Taiwanese aircraft failed to explode.

¹²⁸ In 2004 it was revealed that Israel had transferred an unspecified number of HARPY UAV to China in 1994, a deal which consequently upset the Pentagon which has since pushed for Israel to suspend all military technology transfers to China.

¹²⁹ RAND, *Modernizing China's Military: Opportunities and Constraints*, 2005

¹³⁰ During the 1960s those forces previously established for internal security purposes were disbanded and their functions subsumed by the PLA and militia units.

B. Second Artillery Corps

The Second Artillery Corps (SAC), also referred to as the Strategic Missile Force, maintains both the conventional and nuclear strategic missile forces of the PLA.

Established in 1966, the SAC comprises over 100,000 personnel and although it only makes up about 4.8% of the overall manpower strength of the PLA, it is accorded its own representation on the CMC and is controlled directly by it, without reference to the chain of command governing the other arms of the PLA. It is also given priority funding within the PLA. According to the Nuclear Threat Initiative “it receives 12 to 15 percent of the defence budget and about 20 percent of the total procurement budget”.¹³¹

The SAC is believed to be organised into a headquarters at Qinghe near Beijing, an early warning division, a communication regiment, a security regiment, a technical support regiment, and six ballistic missile divisions. The majority of personnel in the SAC are committed to communication and logistics, with less than half of the overall manpower of the SAC deployed as part of the six missile divisions. Those divisions are comprised of approximately 20 missile launch brigades, which are structured according to the type of missiles deployed. Each brigade only deploys one type of missile thereby facilitating maintenance and training.

1. Ballistic Missile Capabilities

China began developing its strategic missile forces in the mid 1950s. In the absence of an effective air force, missile forces were regarded as a useful means of conducting conventional strikes, particularly in any contingency operation against Taiwan and as such was one of the niche areas within China’s military-industrial complex into which significant investment was subsequently channelled. In addition, China’s missile industry has not been hampered by the organisational inefficiencies that have affected other industrial sectors.¹³² Consequently almost all of the SAC’s ballistic missile capabilities are indigenous, and in contrast to the majority of the PLA’s conventional equipment inventory have not relied on extensive foreign assistance and technology transfer.¹³³

Deployment of China’s first conventionally-armed short-range ballistic missile (the D-1 SRBM) and medium-range ballistic missile (the D-2/CSS-1 MRBM) occurred in the 1960s. The D-3/CSS-2 intermediate-range ballistic missile (IRBM) was subsequently tested in 1969 and deployed throughout the 1970s. At the same time China’s first intercontinental ballistic missile (ICBM), the D-4/CSS-3 was also successfully tested and deployed. Although development of the PLA’s first submarine-launched ballistic missile (SLBM), the JL-1, also began in the late 1960s, it was not deployed until the late 1980s after several major setbacks during the testing programme.

¹³¹ Nuclear Threat Initiative: <http://www.nti.org/db/china/sac.htm>

¹³² See RAND, *Modernizing China’s Military: Opportunities and Constraints*, 2005, p.185-7

¹³³ Capability gaps with respect to other missile requirements, such as anti-ship missiles, have been filled however with the procurement of foreign-sourced capabilities.

Since then, those original missile designs have formed the basis for modernisation of the force and the development of “next generation” capabilities that have included various upgrades in capability such as greater range and improved accuracy. Greater diversity of the SAC’s ballistic missile inventory has been achieved with the development of additional missile variants.

According to the IISS *Military Balance 2008* the SAC’s current strategic ballistic missile capabilities comprise 806 missiles of varying capability:

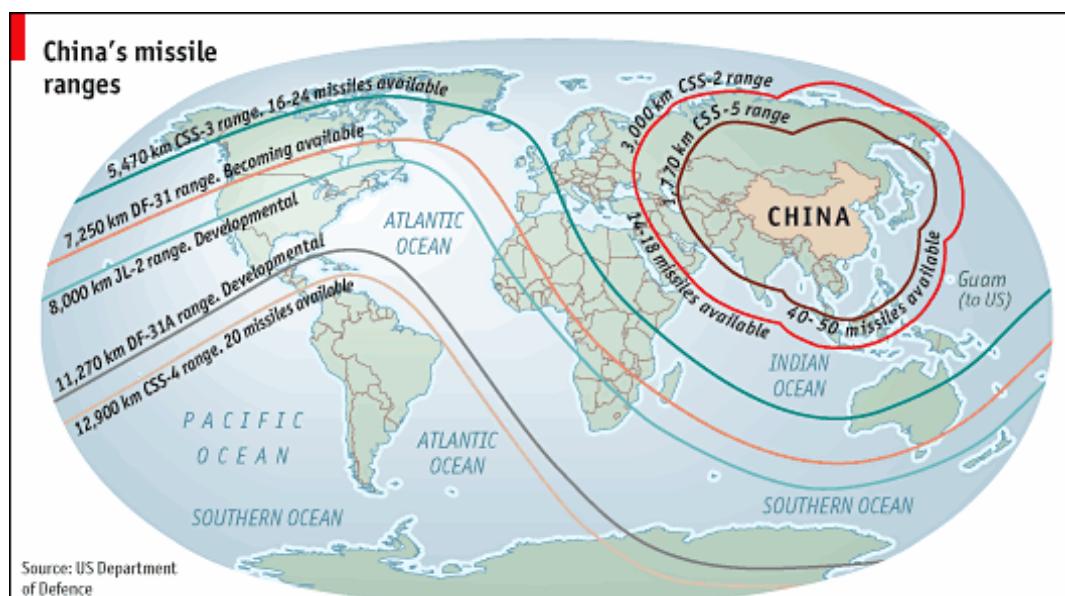
Missile	Number	Warhead Type
ICBM:		
DF-31 (CSS-9)	6	Nuclear
DF-4 (CSS-3)	20	Nuclear
DF-5A (CSS-4 Mod 2)	20	Nuclear
IRBM:		
DF-21 (CSS-5)	33	The IISS does not specify whether these are Mod 1 (nuclear), or Mod 2 (conventional) missiles.
DF-3A (CSS-2 Mod)	2	Nuclear
SRBM:		
DF-11A/M-11A (CSS-7 Mod 2)	500	Conventional
DF-15/M-9 (CSS-6)	225	Conventional
SLBM:		
JL-1 (CSS-N-3)	1 Xia-class submarine equipped with 12 JL-1	Nuclear
JL-2	2 Jin-class with up to 12 JL-2 (operational status unknown)	Nuclear

Order of Battle¹³⁴ information with respect to the Chinese military is difficult to obtain. It is worth highlighting, therefore, that other commentators, including the Pentagon, have offered alternative estimates of the SAC’s ballistic missile capabilities. The Pentagon’s 2007 assessment is less conservative and suggests:

¹³⁴ Order of Battle refers to the organisation of a country’s military units, personnel and equipment.

Missile	Number	Warhead Type
ICBM:		
DF-31 (CSS-9)	Initial Threat Availability	Nuclear
DF-4 (CSS-3)	16-24	Nuclear
DF-5A (CSS-4 Mod 2)	20	Nuclear
IRBM:		
DF-21 (CSS-5) Mod 1/2	40-50	Mod 1 – nuclear Mod 2 – conventional
DF-3A (CSS-2 Mod)	14-18	Nuclear
SRBM:		
DF-11A/M-11A (CSS-7 Mod 2)	575-625	Conventional
DF-15/M-9 (CSS-6)	300-350	Conventional
SLBM:		
JL-1 (CSS-N-3)	10-14	Nuclear
JL-2	Developmental	Nuclear

China's ICBMs (particularly the DF5-A/CSS-4 and DF-31) are capable of striking the continental US, Europe, Russia and the Asian region, while the latter two areas are also within striking distance of its IRBM capabilities. Although the majority of its SRBM are reportedly deployed in the Nanjing military region closest to Taiwan, China's SRBM are also capable of striking portions of India, Central Asia, the Korean peninsula and Thailand. The ranges of China's ICBM and IRBM capabilities are illustrated below:



Despite the fact that the majority of the SAC's missile forces are "next generation" capabilities it is the DF-31 ICBM and the JL-2 SLBM¹³⁵ that have been lauded given the considerable technological advancements they have introduced to the SAC's long-range nuclear capability. The DF-31 is the PLA's first land-mobile¹³⁶ solid-fuel ICBM which is subsequently more reliable, flexible, quicker to launch and more survivable. With the JL-2 that reliability has been translated into the PLA's submarine-based nuclear deterrent, a major operational improvement over the unreliable and operationally contested Xia class equipped with the JL-1.

And the SAC's modernisation efforts are continuing. Along with enhancements to the technical proficiency of its existing capabilities, China is currently developing the DF-31A ICBM which has substantial advantages over its predecessor.¹³⁷ It will have an increased range of 12,000km, thereby bringing the entire continental US within range; MIRV capability¹³⁸ with the possible deployment of up to three payloads; and penetration and decoy aids to complicate missile defence efforts.¹³⁹ The Pentagon had estimated that the DF-31A would achieve initial operating capability in late 2007, although independent analysts have noted that no flight testing has been apparent as yet. Possible deployment of the DF-31A has subsequently been earmarked for around 2010.

The PLA is also reportedly developing a new IRBM, codenamed the DF-25. Although speculation about its development has circulated for several years, in August 2007 the programme was considered to be more feasible after photographs of the DF-25 were placed on the internet.¹⁴⁰ The DF-25 is thought to be a mobile, solid fuelled missile with MIRV capability and a range of 2,500- 3,200km. According to *Janes*, this missile could feasibly achieve an in-service date of 2008.¹⁴¹ The PLA is also thought to be in the advanced stages of developing an anti-ship ballistic missile, based on its DF-21 IRBM, albeit with a conventional payload. This development has largely been interpreted as an effort to neutralise US naval forces in the Pacific, and specifically any potential US involvement in a stand-off between China and Taiwan.

The Pentagon has also noted that the PLA is not only continuing in the development of its next generation missile capabilities, but is also focusing on improved command, control and targeting systems for its overall ballistic missile architecture.¹⁴²

¹³⁵ The JL-2 is based on the DF-31.

¹³⁶ Most of the China's ICBM force is silo-based. The DF-21/CSS-5 IRBM is already a road-mobile capability.

¹³⁷ The DF-31A is believed to have replaced the cancelled DF-41 programme.

¹³⁸ Multiple independently targetable re-entry vehicle. MIRV capability allows the deployment of multiple warheads on one missile which are then capable of simultaneously engaging multiple targets.

¹³⁹ "US experts warn on China's ICBM moves", *Jane's Defence Weekly*, 19 July 2006

¹⁴⁰ Rumoured to have been done by the PLA.

¹⁴¹ "Theories mount over online Chinese missile pictures", *Jane's Defence Weekly*, 15 August 2007. However, there has been some debate over whether the DF-25 is in fact a modified version of the DF-21.

¹⁴² US Department of Defense, *Annual Report to Congress: Military Power of the People's Republic of China*, 2007

2. Land Attack Cruise Missile (LACM) Development

Since the early 1990s the PLA has also been known to be seeking long-range land-attack cruise missile technology along the lines of the US Tomahawk, and possibly assisted by Russia and the Ukraine.¹⁴³ China is also believed to have been seeking important dual-use technologies for its LACM programme from a number of Western countries.¹⁴⁴ The YJ-63 air-launched LACM has already entered service with the PLAAF, while it has been speculated that the PLAN's new Kilo-class submarines are equipped with the 3M-14 sea-based LACM. The new Shang-class submarine is also thought to have been deployed with the 3M-14 LACM.

Details on the PLA's ground-launched LACM capabilities have been less reliable, however, with assessments of the operational status of the programme varying among commentators. What is generally accepted is that ground-based LACM capabilities under development since the 1990s have included the HN-1, HN-2 and HN-3 LACM, each with a range of 600km, 1,800 and 3,000km respectively. Both Jane's and the think tank Global Security have asserted that the HN-1 and HN-2 entered service as early as 1992 and 1996 respectively, while the HN-3 may have entered service around 2005.¹⁴⁵ Each missile could be equipped with either conventional or nuclear warheads. Other analysts have disagreed with this assessment, however, suggesting that the HN-2 only began operational evaluation in 1998.

An important step forward in China's efforts to acquire a reliable ground-launched LACM capability occurred in 2004 when the PLA flight tested the ground-launched second generation DH-10 LACM¹⁴⁶ At the end of 2007 that missile was reported to be in its final stages of development, although it is unclear when it will attain operational status. In 2004-05 the SAC was also reported to have formed a ground-based LACM brigade in Yunnan province in southern China.¹⁴⁷

C. Nuclear Capabilities

1. Background

China is one of five acknowledged nuclear weapons states, an internationally recognised status conferred by the 1968 nuclear Non-Proliferation Treaty (NPT).¹⁴⁸ In 1955 the Chinese leadership initiated a nuclear weapons programme, partly in response to

¹⁴³ This is in addition to the cruise missile capabilities already deployed by the PLAN and the PLAAF and largely with Russian assistance, such as anti-ship cruise missiles. However, these capabilities are not land-attack cruise missiles (LACM).

¹⁴⁴ <http://www.sinodefence.com/strategic/missile/cruisemissile.asp>

¹⁴⁵ <http://www.globalsecurity.org/wmd/world/china/lacm.htm> and "China's new cruise missile programme racing ahead", Jane's Defence Weekly, 12 January 2000

¹⁴⁶ The DH-10 has an estimated range of 1,500 km.

¹⁴⁷ <http://www.sinodefence.com/strategic/missile/cruisemissile.asp>

¹⁴⁸ The other four states are the United States, Russia, the United Kingdom and France. More detail on the NPT can be found in Library Standard Note SN/IA/491, *The Treaty on the Non-Proliferation of Nuclear Weapons*.

concerns about US nuclear threats during the Korean War. Nine years later, China became the last of the five to successfully test an atomic device.¹⁴⁹

The Chinese programme, which followed the uranium enrichment route to produce its fissile material, initially relied on extensive foreign assistance from the Soviet Union, although indigenous know-how and espionage increasingly came to the fore after the breakdown in Sino-Soviet relations, which brought collaboration to a halt in 1960. The absence of significant outside assistance after 1960 appears not to have hindered the programme greatly, with China successfully testing its first atomic device in October 1964 and then testing its first thermonuclear device in June 1967. Observers have commented on the short time-span (32 months) between the two tests, which was substantially less than the other nuclear powers.¹⁵⁰

Between 1964 and 1996, China conducted around 45 nuclear tests at its Lop Nor test site in the western province of Xinjiang, including an intensive series of tests in 1995-96 of reportedly smaller and lighter devices. That test programme has enabled the development of at least six different types of bombs and missile warheads, ranging in size from an atomic device with an explosive yield of between 15 and 40 kilotons, through to 3 and 4-5 megaton thermonuclear devices.¹⁵¹

2. Nuclear Policy

In terms of nuclear policy, successive Chinese leaders and officials have consistently said that China would not be the first to use nuclear weapons “at any time or under any circumstances”. The reasons why China may have adopted a policy of “no first use” (NFU) was examined in a briefing on the Nuclear Threat Initiative website from December 2005:

Beijing often points to its NFU policy as proof that China—in apparent contrast to the United States and Russia—is a “peace-loving” nation that is “pursuing a foreign policy of peace.” Affectation and propaganda aside, “no-first-use” was both conditioned by necessity—a small nuclear arsenal—and by policy, since China’s nuclear weapons were not meant to go beyond countervalue (i.e., city-busting) minimum deterrence. China’s NFU policy has therefore been governed less by altruism than by other limiting factors.¹⁵²

There have been signs in recent years that the policy may be under re-consideration, particularly after comments from Major General Zhu Chenghu, a Dean at China’s National Defense University, in July 2005 about the potential use by China of nuclear

¹⁴⁹ There are two main types of nuclear weapon: those that rely on nuclear fission (colloquially known as atomic bombs) and those more powerful devices that use nuclear fission and fusion (commonly referred to as thermonuclear or hydrogen bombs).

¹⁵⁰ “By point of comparison, 86 months passed between the United States’ first atomic test and its first hydrogen bomb test; for the U.S.S.R. it was 75 months; for the U.K. 66 months; and for France 105 months.” Source: [Nuclear Threat Initiative China Profile: Nuclear Overview](#), last updated January 2006

¹⁵¹ A kiloton is an explosive force equivalent to that of one thousand metric tons of TNT. A megaton is an explosive force equivalent to that of one million metric tons of TNT. The largest device detonated thus far was a Soviet warhead that had an estimated yield of 58 megatons.

¹⁵² [‘Going Beyond the Stir: The Strategic Realities of China’s No-First-Use Policy’](#), NTI Issue Brief, December 2005

weapons in the event of a conventional conflict with the US over Taiwan. He was reported as saying that:

if the Americans draw their missiles and position-guided ammunition on to the target zone on China's territory, I think we will have to respond with nuclear weapons," and that "we [...] will prepare ourselves for the destruction of all of the cities east of Xi'an. Of course the Americans will have to be prepared that hundreds ... of cities will be destroyed by the Chinese.¹⁵³

General Zhu continued that China's long-held "no-first-use" policy could be changed, noting that the policy had really only applied to non-nuclear weapon states.¹⁵⁴ The true implications of these comments are difficult to judge. Some analysts doubt this implies a change in official policy, noting the reiteration of the 'no first use' policy in the 2006 white paper and commenting that the rhetoric used by Chinese military figures is often more bellicose in tone than that of the political leadership, and arguing that China would have little to gain from abandoning its policy of no first use:

The NFU policy has served China well by assuring strategic stability, assisting in a relatively more efficient allocation of limited resources, and allowing Beijing to take the high moral ground on nuclear weapons use. Despite speculation about a shift in China's nuclear doctrine, a careful analysis of official Chinese positions and recent trends in Chinese nuclear weapons modernization would suggest Major General Zhu Chenghu's remarks do not provide any new clues to China's nuclear doctrine, nor do they indicate a move towards building a more offense-capable and war-fighting nuclear posture. A look at the history of China's no-first-use policy, nuclear program, and doctrine, along with its current military planning and modernization, indicate that a move away from the NFU policy is not likely in the near-to-mid-term. Even in the long-term, China's resources and planning will likely be considered better spent on other priorities, and not the costly expansion of its nuclear arsenal.¹⁵⁵

3. Nuclear Deterrent Capabilities

Precise information on the extent of China's nuclear arsenal is difficult to obtain, due to a lack of transparency and the need to decode cryptic comments from Chinese officials. The Chinese stockpile is believed to be relatively small, with an estimated 130 active warheads and a further 70 or so held in reserve, making a total stockpile of around 200.¹⁵⁶ By contrast, the two main nuclear powers, the United States and Russia, have around 5,000 strategic and non-strategic warheads each and a much larger number in their inactive stockpiles. The UK has recently reduced its active stockpile by 20% to fewer than 160 warheads, while France has around 350.¹⁵⁷ Previous estimates of the

¹⁵³ Joseph Kahn, "Chinese General Threatens Use of A-Bombs if U.S. Intrudes," *New York Times*, 15 July 2005; Alexandra Harney, "Top Chinese General Warns U.S. Over Attack," *Financial Times*, 15 July 2005.

¹⁵⁴ Danny Gittings, "General Zhu Goes Ballistic," *Wall Street Journal*, 18 July 2005

¹⁵⁵ ['Going Beyond the Stir: The Strategic Realities of China's No-First-Use Policy'](#), *NTI Issue Brief*, December 2005

¹⁵⁶ ['Chinese Nuclear Forces 2006'](#), NRDC Nuclear Notebook published in *Bulletin of the Atomic Scientists*, May/June 2006, Vol.62, No.3

¹⁵⁷ For background on the UK's nuclear deterrent and the plans to upgrade the Trident submarine-based system, see Library Research Paper 06/53, [The Future of the British Nuclear Deterrent](#), 3 November 2006, and Standard Note SN/IA/4199, [In Brief: The Trident White Paper](#), 8 March 2007.

Chinese arsenal had placed the overall figure at around 400, but the figure has been revised downwards in recent years. In any event, China is believed to have sufficient stocks of fissile material to produce a much larger arsenal.¹⁵⁸

Although China maintains that its nuclear posture is a defensive one, it does have force projection capability, which has been greatly improved in the last few years. China is thus considered to be transitioning from possessing a small, unsophisticated and highly vulnerable nuclear force to a more modern one that has an improved strike capability and which is both more reliable and survivable.¹⁵⁹ As outlined above, the Second Artillery Corps organises and commands the PLA's strategic nuclear missile forces. Ultimate authority to launch nuclear weapons lies with the Chairman of the CMC.

Most of China's warheads are believed to be for use as a strategic deterrent and some sources suggest it does not currently have an operational tactical nuclear capability for use on the battlefield.¹⁶⁰ China's deterrent is based on the nuclear triad principle,¹⁶¹ although the majority of Chinese warheads are believed to be intended for delivery by land-based ballistic missiles. The ground-launched arm of the triad comprises the nuclear elements of the strategic missile forces of the SAC, specifically the DF-31, DF-4 and DF-5A ICBM and the DF-21A and DF-3 IRBM. As outlined above the DF-31 is considered to be a major technological advancement on previous generations of ICBM and as such has provided the PLA with a credible, survivable nuclear strike capability. Once the DF-31A ICBM enters service, potentially around 2010, China will also possess the ability to deploy multiple warheads aboard its ICBM. The DF-31A will also ensure coverage of the entire continental US.

A smaller number of warheads are assigned for delivery by the H-6 bomber (one nuclear ready regiment of up to 20 aircraft each capable of deploying 1-3 nuclear bombs) and/or the Q-5 ground attack aircraft (an estimated 30 aircraft capable of carrying one nuclear bomb), probably as free-fall weapons. However China has recently developed the YJ-63 air-launched land-attack cruise missile for deployment on the H-6 which some analysts have considered could feasibly be converted to deploy a nuclear warhead.¹⁶² With a range of 400-500km the YJ-63 is considered a major advancement of China's aerial strategic nuclear deterrent.

¹⁵⁸ [Nuclear Threat Initiative China Profile: Nuclear Overview](#), last updated January 2006

¹⁵⁹ Most of the China's current ICBM force is silo-based. Efforts at modernisation have included the deployment of road-mobile forces which are considered to provide a degree of protection from an initial nuclear first strike as they are more difficult to locate.

¹⁶⁰ Strategic weapons are intended for use against an adversary's homeland, with the intention of causing catastrophic damage. One level down from a strategic strike is what is termed the sub-strategic option, whereby one or a handful of nuclear warheads would be fired at an adversary as a means of sending a political message and demonstrating resolve, without inflicting the full destructive power and catastrophic effects of the whole deterrent. A further level down is the tactical nuclear option, where weapons would be used for a military purpose against enemy units on the battlefield.

¹⁶¹ For delivery by land, sea and air.

¹⁶² ['Chinese Nuclear Forces 2006'](#), NRDC Nuclear Notebook published in *Bulletin of the Atomic Scientists*, May/June 2006, Vol.62, No.3

Its submarine-based capability currently consists of one Xia-class (Type 092) strategic SSBN equipped with 12 JL-1 ballistic missiles¹⁶³ and possibly two or three vessels of the Jin-class (Type 094) SSBN equipped with 12 JL-2 ballistic missiles¹⁶⁴ which was earmarked to replace the ageing Xia-class and entered service in late 2007.¹⁶⁵ At present China's SSBN fleet is based in the north at Qingdao. It has been suggested, however, that the fleet could at some point in the future be deployed to Yulin in the south in order to give it immediate access to deep water patrols.¹⁶⁶

Prior to the deployment of the Jin-class a number of analysts had questioned the credibility of China's submarine-based deterrent. The Federation of American Scientists for example, has asserted that the Xia-class SSBN has never conducted a deterrent patrol, therefore placing in doubt its operational status.¹⁶⁷ Others have also argued that no nuclear-armed JL-1 ballistic missiles were ever deployed aboard the Xia-class. The Jin-class however is regarded as the first reliable submarine-based nuclear strike force as it constitutes major technological advancement over the Xia-class submarine and particularly in relation to stealth, sonar, propulsion, command and control systems and overall survivability of the sea-based deterrent. In order to maintain a credible 'at-sea deterrence' the US Office of Naval Intelligence has argued that China will need to procure five Jin-class SSBN. Whether China has plans to deploy that many, however, is debated. That assessment was not, for example, included in the Pentagon's 2007 report.

¹⁶³ China has stated that it has built two Xia-class SSBN, although most analysts concur that only one is operational (*Nuclear Threat Initiative*).

¹⁶⁴ The JL-2 is a submarine-launched version of the land-based DF-31 and has a range of 8,000km, which is a significant advancement on the current range of the JL-1.

¹⁶⁵ The Federation of American scientists reported in October 2007 that a possible third submarine of the Jin-class had been spotted, although to date the existence of that third vessel has not been confirmed.

¹⁶⁶ In contrast to the shallow waters of the Bohai Gulf where it is currently situated. "China's submarines pose regional, strategic challenges", *Armed Forces Journal*, March 2006

¹⁶⁷ "Two more Chinese SSBN spotted", *Federation of American Scientists*, October 2007

IV Military Modernisation Plans

China's 2006 defence white paper set out the country's intention over the next few decades to embark upon an extensive programme of military modernisation and transformation in order to meet the strategic objectives that it has identified for itself.

Arguably, that programme of modernisation has already begun, as evidenced by the considerable modernisation and upgrade of the PLA's ageing capabilities over the last ten years. The Navy, Air Force and strategic missile forces have been the main focus of that investment and as such have been augmented quite significantly with the acquisition of new capabilities that have brought about qualitative improvements. And the programme of modernisation is set to continue. The acquisition of additional Shang, Yuan and Jin-class submarines and other surface combatants with greatly improved air defence and possible land-attack capabilities will continue to enhance the operational scope of the PLAN. Additional J-10 aircraft equipped with the YJ-63 LACM, Su-Mk 30, the possible introduction of the J-X fourth generation fighter aircraft at some point in the future and the purchase of additional strategic lift aircraft will enhance both the long-range strike and expeditionary capabilities of the PLAAF. The development of the DF-31A ICBM, an anti-ship ballistic missile capability based on the DF-21 IRBM and further enhancements to the PLA's existing missile inventory, including a potential ground-launched LACM, will also shore up the capacity and diversity of the SAC.

Yet, China's modernisation plans are not simply focused on upgrading the PLA's existing capabilities. Although there is significant uncertainty over what China's long term aspirations actually are, it is widely acknowledged that China is looking to embrace the revolution in military affairs¹⁶⁸ and both professionalise and transform its military across the whole spectrum of combat capabilities. The aim is a reconfiguration of forces that will provide China with the ability, should it choose to use it, to conduct high intensity conflicts of relatively short duration and against technologically capable adversaries. The inclusion in the white paper of trans-regional mobility, the improvement of offensive strike, and strategic force projection as specific capability priorities suggests that the PLA is seeking to procure new capabilities that will allow future operations to be effectively conducted and sustained at distance: not only within, but also potentially beyond China's traditional regional sphere of influence.

As outlined above, China's attempts to increase the capacity and sophistication of its military-industrial complex in order to meet the requirements of what is undoubtedly a technologically demanding modernisation plan domestically have progressed quite significantly in the last few years. However, its ability to independently manufacture the range of advanced weaponry envisaged by China, thereby achieving technological parity with the most advanced militaries in the world, arguably continues to be limited. For the foreseeable future, therefore, China is considered likely to continue procuring advanced weapons systems from overseas and in particular from Russia, presuming of course that continued access to advanced Russian technologies is not limited in any way.

¹⁶⁸ The revolution in military affairs refers to transformation and evolution of military forces so as to embrace the full potential of technological advancement. RMA is at the heart of "network centric warfare" or what the Chinese have referred to as "informationized warfare".

The ability of China to sustain the pace of its ambitious armed forces modernisation agenda will, however, depend heavily upon the Chinese economy continuing to grow at the same rate for the foreseeable future. Recent World Bank estimates have, for example, suggested that the size of the Chinese economy has been over-estimated by approximately 40%.¹⁶⁹ Maintaining consistent levels of economic growth and high levels of defence expenditure will be particularly relevant if China maintains a reliance on the procurement of expensive foreign weapons systems. The Chinese government must also continue to successfully channel resources into the military given the potential competition for funding in the future. Demographically the Chinese population is, for example, an ageing one. The future requirement for an adequate pension and healthcare system to reflect that demographic change, among other domestic considerations, could feasibly put pressure on future defence budgets.

A. Professionalisation of the Armed Forces

Over the last few years China's military modernisation has not only focused on weapons acquisition but also on measures to professionalise the PLA. In 1985, 1997 and 2003 China announced that it would cut the size of the PLA by one million, 500,000 and 200,000 personnel respectively. Those latest reductions were achieved by the end of 2005 with the Army being the focus of much of the force reductions. Conscription has also been reduced, which has had the result of improving the effectiveness of deployed forces. Considerable resources have also been allocated to improved training, recruitment and retention initiatives, inter-service co-operation and integrated joint service exercises.

Since 2004 China has also embarked upon an unprecedented programme of military diplomacy including multinational joint exercises and reciprocal military exchanges with foreign militaries. Significantly, PLA exercises have also been opened up to foreign military observers. On the whole those exercises and exchanges have been conducted within the context of China's bilateral defence relations with its main regional neighbours, although outreach to the US and other western powers, including France and the UK, has also been notable. In March 2004 for example the PLAN conducted its first ever joint exercise with the French Navy, and its first joint exercise with a major Western power. More recently, greater military co-operation with the United States has also been encouraged and in November 2006 joint search and rescue exercises were held by both countries' naval forces in the South China Sea.¹⁷⁰

However, the bulk of China's military diplomacy has been focused on its regional neighbours and its traditional allies, a trend which is expected to continue. Pakistan is a longstanding ally of China and defence co-operation has played an important part in that relationship. In May 2007 China and India also announced that military co-operation between the two countries would be boosted through a series of joint army exercises and

¹⁶⁹ "China's economic muscle shrinks", *BBC News Online*, 17 December 2007

¹⁷⁰ Proposed closer military ties with the US have also included officer exchanges and other confidence-building measures such as the establishment of a "military hotline" between Beijing and Washington.

reciprocal military visits. Although periodic joint manoeuvres between their respective naval forces have been held over the years, such exercises would be the first conducted by their ground forces. Those exercises were held in December 2007 after which a Chinese Foreign Ministry spokesman suggested that in the future such exercises "could become a routine part of relations between the countries' armies".¹⁷¹ In January 2008 agreements on defence co-operation and reciprocal military exchanges with Singapore and Indonesia were also signed by China. Within the regional context China has also recently proposed that joint military exercises between the member states of ASEAN should be held in mid-2008.¹⁷² Such an exercise would be the first of its kind and for some analysts the proposal is indicative of China's longer term ambition in the region of providing a counter to US influence.

Yet it has been China's strategic relationship with Russia, and particularly the participation of both states in the Shanghai Cooperation Organisation (SCO)¹⁷³ that has attracted the most attention in the last few years. From a bilateral perspective, at a meeting in Beijing in March 2006 President Putin and President Hu Jintao declared 2006 to be 'The Year of Russia' and agreed to increase military co-operation and exchanges. In 2007 that commitment culminated in Sino-Russian participation in eight co-operative military activities. In 2005 Russia and China also conducted their first major joint military exercise under the auspices of the SCO, codenamed "Peace Mission 2005". That exercise was conducted again in 2007. Commenting on the outcome of those exercises an article in the *Asian Wall Street Journal* commented:

This year's Peace Mission in Russia involved about 4,000 troops and 100 aircraft from China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan, a threefold increase in participants over Peace Mission 2005, held in China. This year's Peace Mission exercises, conducted from Aug. 8 to 17, included full-fledged conventional air-ground offensive manoeuvres that stressed ground and airborne assault, and coordinated air strikes by attack aircraft and attack helicopters [...]

Less clear is against what or whom the show of force was directed [...] Peace Mission 2007 is a cooperative exercise by the rulers of the Central Asian states, supported by China and Russia, designed to prevent political instability. But that is not all. "Peace Mission 2007" also reveals a worrying pattern of cooperation between Moscow and Beijing, broadly speaking, against the west and democratic ideas [...]

But the SCO's ability to develop a deeper military alliance is not certain. Russian press reports note that China rejected Russia's proposal to co-host the exercises with the Russia-dominated Collective Security Treaty Organization, indicating that currently coincidental Russian-Chinese security agendas could easily diverge.¹⁷⁴

¹⁷¹ "China open to more military exercises with India", *Agence France Presse*, 27 December 2007

¹⁷² See "China seeks joint exercise with ASEAN countries", *Jane's Defence Weekly*, 25 April 2007

¹⁷³ Some observers have expressed the view that the SCO could evolve into a China-Russia security body designed to counter the influence of the US and the EU in Central Asia. See Library Research Paper RP06/36, *A Political and Economic Introduction to China*, 16 June 2006 for further detail. Additional information on the SCO is also available in Library Standard Note, SN/IA/3908, *China, Russia and the Shanghai Cooperation Organisation*.

¹⁷⁴ "Peace Mission", *Asian Wall Street Journal*, 15 August 2007

Picking up on this latter point, an article in *RUSI Newsbrief* also highlighted:

The SCO, which was originally created with the aim of building mutual trust between Central Asian countries, has often changed its objectives to tackle issues as broad ranging as energy and defence depending on the shifting aspirations and interests of its member and observer countries at any given time. These countries are indeed supporters of a multi-polar counter-balance to US unilateralism, but they do not share a common military purpose [...] It is therefore unlikely that SCO members would ever band together in an anti-Western military coalition in the near future.¹⁷⁵

More generally, while such exercises and exchanges have been regarded as effective tools for increasing the professionalisation of China's forces, the political utility of closer military engagement with China's regional neighbours cannot be ignored. An article in *Jane's Intelligence Review* in November 2007 commented:

China's engagement in worldwide military exercises serves many political and military purposes and is a way to enhance its global presence [...]

This furtherance of soft power through hard power is a political goal of the exercises, but there remain various others, including reassuring various parties as to the ability and intentions of China's military and learning from the performance of other militaries. For example, both Peace Mission exercises in 2005 and 2007 allowed the PLA to test new joint warfare doctrines with the far more experienced Russian armed forces in more complex military operations. Naval exercises also give the PLA insights into Western and NATO communications and logistics operations that may prove useful for when the PLA may come to lead multilateral naval exercises [...]

The exercises are allowing the PLA to extend its reach in military diplomacy [...] moreover in building military alliances and gaining regional and extra-regional confidence in its military and its operations, China is seeking to ease concerns that its growing military reach will prove a threat...¹⁷⁶

However, the article also goes on to state:

Exercises with regional allies such as Peace Mission 2007 are useful for learning about new weapons systems that may be on offer and for demonstrating the ability and willingness to intervene beyond its border should a situation become severe enough.¹⁷⁷

¹⁷⁵ "Russia, China and the SCO", *RUSI Newsbrief*, July 2007

¹⁷⁶ "Flying the flag – China's global military exercises", *Jane's Intelligence Review*, 1 November 2007

¹⁷⁷ *ibid*

B. Conventional Procurement Priorities

The objective of conducting and sustaining what the Chinese have termed "informationized wars",¹⁷⁸ at distance and in defence of China's increasingly global interests, will require assets that provide expeditionary capability and information superiority. Consequently, China's conventional procurement priorities have, thus far, appeared to focus on the development of an aircraft carrier capability, strategic lift, aerial refuelling capabilities and intelligence, surveillance and reconnaissance (ISR) assets. Analysts have also pointed to China's apparent development of asymmetric technologies that go beyond the traditional military sphere and into the non-traditional areas of space and cyberspace, as an additional cause for concern.

a. *Expeditionary Capabilities*

Since the mid-1980s China has expressed sporadic interest in the study and development of carrier technologies.¹⁷⁹ More recently in October 2006 Lieutenant-General Wang Zhiyuan, Vice Chairman of the Science and Technology Committee in the PLA's General Armament Department stated:

The Chinese army will study how to manufacture aircraft carriers so that we can develop our own... aircraft carriers are indispensable if we want to protect our interests in the oceans.¹⁸⁰

Indeed, progress in China's carrier programme is arguably more advanced than mere discussion about the PLAN's possible requirements in this area. For several years Russia is believed to have been not only assisting China in the completion of an aircraft carrier which was acquired from Ukraine in 2000,¹⁸¹ but has also been providing assistance in the construction of three Chinese-designed aircraft carriers. In March 2007 a Chinese Admiral of the PLAN was quoted as saying that the Chinese shipbuilding industry is actively conducting R&D in aircraft carrier construction and could be ready to build such a vessel by 2010.¹⁸² A number of analysts have thus predicted that China could have an operational carrier by 2015, while others have considered 2020 to be a more realistic timeframe.¹⁸³

China has also recently expressed an interest in acquiring weapons and technologies linked to aircraft carriers, including the possible purchase of up to 48 Russian Su-33 fighter aircraft. In contrast to the Su-30 already in-service in the Chinese Air Force, the

¹⁷⁸ For an explanation see part I B.

¹⁷⁹ In 1985 China purchased the Australian carrier HMAS Melbourne which was later scrapped. China also purchased two former Soviet carriers in 1998 and 2000 which were subsequently used as floating military theme parks. Although none of these carriers were used operationally by the PLA they provided crucial design information.

¹⁸⁰ IISS, *Military Balance 2008*, p.360

¹⁸¹ Construction of the aircraft carrier was started by the Soviet Union although that ceased once the ship was inherited by Ukraine. It was sold by Ukraine in 2000 to a Hong-Kong based company for use as a floating casino. However, in late 2005 it was reported that the carrier was berthed at the naval shipyard in Dalian and painted in PLAN military colours.

¹⁸² "Reflecting change: 2007 annual defence report", *Jane's Defence Weekly*, 26 December 2007

¹⁸³ US Department of Defense, *Military Power of the People's Republic of China 2007*, p.24

Su-33 is carrier-capable.¹⁸⁴ There have also been suggestions that China is exploring options for at least two carrier-based airborne radar platforms.¹⁸⁵ Although there is a degree of uncertainty over China's exact carrier procurement plans as an article in *Armed Forces Journal* in May 2006 observed:

While open sources do not allow for an exact assessment of the future PLAN [PLA Navy] carrier air wing, it's increasingly clear that the Chinese have a number of options going forward. Which path they choose is less certain than their obvious desire to develop a capability.¹⁸⁶

In order to support operations, at distance, in 2005 China also ordered an additional 38 Il-76MD long-range transport aircraft and Il-78 tanker-transport aircraft from Russia in an attempt to supplement the PLAAF's strategic lift and aerial refuelling capabilities.¹⁸⁷ First deliveries of the aircraft were expected to begin in 2007. However, in March 2007 that contract was delayed due to an increase in production costs, after which most of the production was transferred from Uzbekistan to Russia. At present, it is unclear when delivery of those additional aircraft will now take place. The contract is reported to have been put on hold until a dispute over the price of the aircraft is concluded between the Russian and Chinese governments.

b. Intelligence, Surveillance and Reconnaissance (ISR)

In order for the PLA to achieve an end-state whereby they are capable of winning "informationized wars by the mid-21st century", the development of a sophisticated C4ISR architecture¹⁸⁸ within which the PLA's assets are fully integrated, will be essential.

To that end the PLA has dedicated considerable resources to developing its indigenous capabilities in this area. Indeed the level of progress achieved thus far has been notable, particularly with respect to its surveillance and reconnaissance assets. As an article in *Jane's Defence Weekly* has noted:

China is estimated to be developing around 15 types of satellite that include imagery reconnaissance, electronic intelligence and signals intelligence reconnaissance satellites; small and micro-sized satellites for imagery, navigation and communications roles; and anti-satellite weapons. It is estimated that China may have a requirement for as many as 200 military, civilian and dual-use satellites in the first two decades of the 21st century.¹⁸⁹

In its 2007 assessment the Pentagon also highlighted this upward shift in the PLA's surveillance, reconnaissance and communication abilities. Yet, the extent of modernisation in this sector has been regarded as unsurprising given the ability of the

¹⁸⁴ Initially the contract is reported to be for two test and evaluation aircraft, with the option of procuring up to 48.

¹⁸⁵ "Global ambitions", *Armed Forces Journal*, May 2006

¹⁸⁶ ibid

¹⁸⁷ Although sold to China through the Russian state-run Rosoboronexport organisation the aircraft were to be manufactured in Uzbekistan.

¹⁸⁸ Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance. This is also occasionally referred to as C4ISTAR which also incorporates target acquisition.

¹⁸⁹ "Marching forward", *Jane's Defence Weekly*, 25 April 2007

PLA to exploit the skills, knowledge and expertise that is already available in China's relatively advanced commercial space and IT sectors, both of which are supported by significant State research and development assistance.¹⁹⁰ As RAND has noted:

China's IT sector should be viewed as a civilian industry with links to the Chinese defense industrial establishment and the PLA. Certain IT companies supply finished command, control, communications, computers, and intelligence (C4I) equipment and related products to the PLA, facilitating a major modernization of China's military C4I infrastructure. Whereas China's defense-industrial system has long suffered from a wide-ranging set of structural problems that have impeded development of modern military equipment, the commercial IT sector carries none of these burdens.

As a result, the PLA has reportedly achieved significant improvements in its communications and operational security, as well as its capacity to transmit information...

The indigenous development of these capabilities is also considered a potential strength if China is to pursue, over the longer term, fully networked military assets. In contrast to its previous approach to addressing its capability gaps, China has been considered, at least by some analysts, as unlikely to be able to source, on a large scale, such capabilities from overseas.¹⁹¹

As ISR priorities for the future the Pentagon's 2007 report suggests:

China is planning eleven satellites in the Huanjing program capable of visible, infrared, multi-spectral, and synthetic aperture radar imaging. In the next decade, Beijing most likely will field radar, ocean surveillance and high resolution photoreconnaissance satellites [...]

China may be developing a system of data relay satellites to support global coverage, and has reportedly acquired mobile data reception equipment that could support more rapid data transmission to deployed military forces and units [...]

China is developing microsatellites – weighing less than 100 kilograms – for remote sensing, and networks of imagery and radar satellites. These developments could allow for a rapid reconstitution or expansion of China's satellite force in the event of any disruption in coverage.¹⁹²

Arguably, however, China's greatest challenge will not necessarily be the direct acquisition of ISR assets, such as satellites, UAV, airborne early warning or over-the-horizon radar. Rather it will be in the integration and networking of those new capabilities together with an array of technologically diverse and disparate legacy systems. The fact that a substantial proportion of those legacy systems are second and third generation capabilities based on originally reverse-engineered technologies could be problematic

¹⁹⁰ The significance of China's R&D spending is examined in the DEMOS report "The Atlas of Ideas: How Asian Innovation can Benefit All", January 2007 (http://www.demos.co.uk/files/Overview_Final1.pdf)

¹⁹¹ See for example, Eugene Kogan, "Chinese Procurement and Capabilities", Defence Academy, April 2006

¹⁹² US Department of Defense, *Military Power of the People's Republic of China 2007*

given the limitations of the Chinese defence industry. One of the main disadvantages of reverse engineering is that the detailed knowledge of how individual and often complex component systems that make up a platform operate is often not fully understood. As a result ‘quick fixes’ are often incorporated into the ‘copy’ in order to achieve success. Effectively integrating a variety of platforms, for which China is not the original design authority, into an overarching network that provides effective command and control, information superiority and situational awareness of the battlespace in “real time”, will be a real test of China’s industrial capabilities. It will also require considerable financial resources.

As RAND have pointed out:

it is not clear whether this increasingly advanced information technology system in the military will only improve the handling of information, or will perform the much larger function of bootstrapping the PLA’s much more primitive, much less “informationized” conventional forces into a more modern force.¹⁹³

c. Non-Traditional Technologies

The indications are that in the last few years China’s military modernisation plans have not been focused exclusively on traditional areas of competence. Motivated by the fact that China’s military capabilities are in no way a match for the technologically superior forces of the US, the PLA has thus been seeking to develop exploitative asymmetric capabilities that would offset the US’ qualitative and quantitative superiority on the battlefield. What some analysts have referred to as the ancient martial art of “pressure point warfare”.¹⁹⁴

Anti-Satellite Test

China’s intention to procure capabilities of this nature rose to the fore in January 2007 when the PLA successfully tested a direct ascent anti-satellite (ASAT) ballistic missile against an aging Chinese weather satellite. While ASAT technology is not new, China’s conduct of an ASAT test is the first in over 20 years and has raised several interesting issues. Firstly, it has underlined the growing capabilities of the PLA, and indeed the seriousness with which China is taking its military modernisation agenda in terms of expanding its capabilities. While China has insisted that the test was non-threatening it would, theoretically, allow China, for the first time, to take offensive action against the satellite capabilities of another nation in low earth orbit. Such action could seriously disable an enemy’s Global Positioning System (GPS), reconnaissance and communication networks.

Indeed the exact scale and progress of China’s ASAT programme remains unclear. A report submitted to the Congressionally-mandated US-China Economic and Security Review Commission in January 2007 suggested that China is considering the covert deployment of a broad set of anti-satellite capabilities including directed-energy weapons

¹⁹³ RAND, *Modernizing China’s Military: Opportunities and Constraints*, 2005

¹⁹⁴ See “Pressure point warfare: China swings the assassin’s mace”, *RUSI Newsbrief*, March 2007

and orbiting spacecraft, in addition to ground-based kinetic energy interceptors.¹⁹⁵ An article in *Jane's Defence Weekly* in April 2007 also suggested:

The PLA's anti-satellite capabilities extend beyond the kinetic kill vehicle weapon used in the January [2007] test and also include ground-based high-powered lasers that can disable satellites. In late 2006, US government officials claimed that the PLA was using a laser to blind its satellites.¹⁹⁶

Secondly, the ASAT test raises questions over China's commitment to its international arms control obligations. As outlined above China has consistently opposed the weaponisation of space, being both a signatory of the *Outer Space Treaty* and a member of the UN Committee on the Peaceful Uses of Outer Space. However, the conduct of the ASAT test has led many to question whether that opposition is now waning. Indeed the British government's initial response to the test was to express concern over the lack of consultation with the international community¹⁹⁷ and that the "development of this technology and the manner in which this test was conducted is inconsistent with the spirit of China's statements to the UN and other bodies on the military use of space".¹⁹⁸

Kevin Pollpeter of the US Center for Intelligence Research and Analysis, writing in *RUSI Newsbrief*, commented:

China's actions do not appear to be aimed at coercing the United States to negotiate a space weapons treaty [...] it is possible that the test was a response to US government and military statements advocating the development of space weapons [...] Chinese strategists may believe that the United States already possesses space weapons or will eventually develop them regardless of Chinese actions, and that they must possess space weapons to conduct their own counterspace missions or create a deterrent against the US use of space weapons. Therefore, the test should be viewed in a more military rather than a diplomatic context.¹⁹⁹

As he went on to highlight in that article, China's adherence to similar arms control measures, such as the moratorium on nuclear testing, could also now be questioned.

Finally, the development of this offensive capability raises questions as to what China's long term military intentions actually are. As set out in the next chapter, the extensive and multi-faceted nature of China's military development is considered at odds with ideas of China's "peaceful rise", leading many to question whether China's military build up is indeed benign. Alexander Neill, Head of the Asia Programme at RUSI, has observed:

¹⁹⁵ A copy of this report is available at: http://www.uscc.gov/researchpapers/2007/FINAL_REPORT_1-19-2007_REVISED_BY_MPP.pdf

¹⁹⁶ "Marching forward", *Jane's Defence Weekly*, 25 April 2007

¹⁹⁷ Chinese officials did not publicly confirm the ASAT test until 13 days after its occurrence, and almost a week after the US Government had revealed the test.

¹⁹⁸ "Chinese missile destroys satellite in space", *The Daily Telegraph*, 21 January 2007

¹⁹⁹ "Motives and implications behind China's ASAT test", *RUSI Newsbrief*, February 2007

If the Chinese leadership's game has been calculated to keep people guessing, then some answers might be found on the twin-tracked approach of 'negotiating whilst on the offence' – an old but not exclusively Chinese military strategy. This explains the mock schizophrenia. Most importantly, however, China's recent military gestures have shown that China has moved from planning to application and remains very much on course in its series of five year plans to modernise the PLA.²⁰⁰

He goes on to conclude:

If one takes the ASAT test as one facet of a multi-faceted campaign of muscle flexing by the PLA, then we can expect to see other assassin's maces wielded by China in the next five years. These are likely to be sophisticated over-the-horizon radar capabilities, enhanced targeting systems, the development and deployment of sea denial weapons and further forays into the space and internet domain. If this is the case, then we are likely to see more pressure points being tested in the coming year.²⁰¹

Cyberwarfare

In the last few years China has also been accused of conducting 'cyber' operations against foreign government institutions and other organisations. In 2003 cyber attacks, reportedly of Chinese origin, were staged against several military command networks in the US; while in June 2006 the computer networks of the Taiwanese Ministry of National Defense and the American Institute in Taiwan were also targeted.²⁰² More recently a number of high profile operations were reportedly conducted against the German government and the US Department of Defense during the summer of 2007, although other countries including the UK were also reported to have been targeted. In both the German and US cases the intention of the attacks appears to have principally been the acquisition of information.²⁰³ Although the Chinese government has maintained a position of denial with regard to involvement in these operations the incidents have renewed debate over China's efforts in the last decade to develop technologies of this nature.

Analysts have pointed to the inclusion in Chinese military literature of arguments for the development of an asymmetric warfare strategy based, in part, on denial-of-service attacks, as evidence that China is seeking to acquire such capabilities. Indeed in an age where information superiority and exploiting intelligence in "real time" is at the heart of modern military strategy,²⁰⁴ like the development of ASAT capabilities, it is unsurprising that China should view the ability to disrupt information networks or conduct cyber surveillance and espionage as key capabilities for the future. This is particularly pertinent given the reliance of US military capabilities on internet and satellite communications.

²⁰⁰ "Pressure point warfare", *RUSI Newsbrief*, March 2007

²⁰¹ "Pressure point warfare", *RUSI Newsbrief*, March 2007

²⁰² See Cordesman and Kleiber, "Chinese Military Modernization and Force Development", *Center for Strategic and International Studies*, August 2006

²⁰³ Chinese spy software was reportedly discovered in computers in the office of German Chancellor, Angela Merkel, and other ministries in May 2007. While in June similar software was also reportedly discovered in the office of the US Defense Secretary, Robert Gates.

²⁰⁴ Referred to as network centric warfare.

Chinese cyber operations, like an offensive ASAT strike, could essentially offset any US advantage on the battlefield. As Alexander Neill has pointed out:

Any modern military in the digital age must be able to deploy an offensive, covert but ultimately deniable computer network penetration capability.²⁰⁵

However, the utility of cyberwarfare, is also not limited to the battlefield. The reliance of civil society more generally on IT and the internet, including financial centres and critical infrastructure, potentially opens up a plethora of possibilities for cyber-based operations, particularly ‘denial of service’ attacks.²⁰⁶ The cyber attack on Estonia in February 2007²⁰⁷ for example brought down several government websites, a major bank and telephone networks. An article in *The Economist* in September 2007 also commented:

Past American exercises to test the computer defences of critical services (such as electricity grids) have found that, without detailed inside information, an external cyberattack would be more disruptive than catastrophic. That assessment may be changing. The psychological effect of a cyberattack on America, in General Cartwright’s view [Vice Chairman of the US Joint Chiefs] could be as severe as the use of weapons of mass destruction.²⁰⁸

Indeed the PLA is considered to have the wealth of IT experience required to enable effective cyber operations, at its disposal. For the last ten years the Chinese government has actively promoted the use of the internet, albeit at the same time policing its content. Consequently China’s IT sector is the sixth most important global ICT market,²⁰⁹ IT literacy is high and, according to some analysts, the PLA organises annual competitions for computer hackers in order to recruit the most talented.²¹⁰

However, as with China’s approach to the ASAT test, the intentions of the PLA with regard to the incidents in 2007 are also unclear. An article in *Strategic Comments* in September 2007 suggested that:

The frequency and persistence of computer attacks – in 2005 the Pentagon logged 79,000 attempted intrusions of US government and defence industry systems – has led some analysts to speculate that China’s military may actually be seeking to highlight its capacity to disrupt critical military systems to its US counterparts.²¹¹

²⁰⁵ “Cyber tiger, hidden dragon”, *RUSI Newsbrief*, October 2007

²⁰⁶ For a discussion of the applicability of international humanitarian law to Cyberwarfare operations see Michael Schmitt, “Wired warfare: computer network attack and jus in bello”, *International Review of the Red Cross*, 2002 and Knut Dörmann, “Applicability of the additional protocols to computer network attacks”, *International Committee of the Red Cross*, 2004

²⁰⁷ Reportedly conducted with the support of the Russian Government.

²⁰⁸ “Beware the Trojan Panda”, *The Economist*, September 2007

²⁰⁹ *OECD Information Technology Outlook 2006*, Ch.4

²¹⁰ See “China’s cyber attacks”, *Strategic Comments*, September 2007 and “China’s cyber army”, *The Times*, 8 September 2007

²¹¹ “China’s cyber attacks”, *Strategic Comments*, September 2007

C. Nuclear Procurement Priorities

In recent years, US intelligence has consistently predicted a significant expansion of China's nuclear capability in the future, with some observers arguing that China will be forced to take such a step to ensure that the credibility of its nuclear deterrent is not undermined by the development of US ballistic missile defence capabilities.²¹² A report on the Nuclear Threat Initiative website highlighted what it saw to be three primary explanations behind China's moves to strengthen its arsenal:

First, China may simply wish to update its aging weapons systems and replace them with more modern systems. Second, China may be seeking a new fleet of ballistic missiles to increase the survivability of its nuclear deterrent. As other countries (particularly the United States) continue to increase their military capabilities, China may feel more vulnerable. From Desert Storm through the 2003 war in Iraq, the United States has continuously demonstrated its ability to use conventional forces to destroy fixed targets with tremendous accuracy. U.S. efforts to develop a ballistic missile defense system also threaten the deterrence capability of China's aging nuclear forces. China's leaders may fear that their older, immobile nuclear forces are vulnerable or ineffective as a deterrent, and should be replaced by newer, road-mobile nuclear forces and ICBMs such as the DF-31 and DF-31A missiles. Finally, China's efforts to increase its nuclear capabilities may indicate an important, yet undeclared, shift toward a more assertive nuclear policy. Proponents of this explanation argue that "More Chinese missiles might signal a possible shift from a retaliatory counter value posture to an offensive counterforce posture, particularly if accompanied by necessary improvements in accuracy. According to Paul Godwin, a sufficient number of weapons could permit China for the first time to attempt intrawar escalation control, since Beijing would retain enough forces to respond at a higher level if the aggressor chooses to escalate a nuclear exchange."²¹³

In its 2005 report RAND also highlighted what it considers to be priorities for China's nuclear deterrent modernisation. That report stated:

To achieve a more credible nuclear deterrent the PLA needs to acquire the following capabilities:

- A greater number of land- and sea-based longer-range ballistic missiles with improved range, accuracy, and survivability to bolster the credibility of China's nuclear deterrent. The exact number and configuration of such systems will depend greatly on the structure and size of any future U.S. missile defense system.
- More advanced warhead technologies that could penetrate a limited U.S. missile defense system.
- Smaller, more powerful nuclear warheads with potential multiple independently targetable reentry vehicle (MIRV) or multiple reentry vehicle (MRV) capabilities. In the past, China eschewed developing this capability. Future decisions will be influenced by U.S. ballistic missile defense programs

²¹² See Library Research Paper 03/28, [Ballistic Missile Defence](#), for background on this issue.

²¹³ [Nuclear Threat Initiative China Profile: Nuclear Overview](#), last updated January 2006

- A modern early warning system with advanced land, airborne, and space-based C4ISR assets.²¹⁴

Other commentators, however, have questioned the assumption that China is expanding its arsenal in a significant fashion. They argue that the cost of expansion would be prohibitive and that the deployment of new systems will be offset by the need to retire older generation warheads, resulting, at most, in a moderate rise in the overall arsenal.²¹⁵

²¹⁴ RAND, *Modernizing China's Military: Opportunities and Constraints*, 2005

²¹⁵ See '[Chinese Nuclear Forces 2006](#)', NRDC Nuclear Notebook published in *Bulletin of the Atomic Scientists*, May/June 2006, Vol.62, No.3

V Assessment of China's Modernisation Plans

The dichotomy between what China characterises as its “peaceful development” and its military ambitions, inevitably raises questions as to whether China’s military build up is indeed benign. Even if the answer is yes, it is also worth asking whether such extensive military spending and modernisation can really be achieved exclusively of repercussions within the international system. On a global scale, realistically, the emergence of China as a hegemonic superpower with economic and military superiority, regardless of whether its intentions are peaceful or not, is also unlikely to go left unchecked.

In its 2007 assessment of China’s military capabilities, the US Department of Defense summed up this dilemma:

The outside world has limited knowledge of the motivations, decision-making, and key capabilities supporting China’s military modernization. China’s leaders have yet to explain adequately the purposes or desired end-states of the PLA’s expanding military capabilities. China’s actions in certain areas increasingly appear inconsistent with its declaratory policies. Actual Chinese defense expenditures remain far above officially disclosed figures. This lack of transparency in China’s military affairs will naturally and understandably prompt international responses that hedge against the unknown.²¹⁶

The biggest question, therefore, comes down to what is China’s long term intent? In the view of some critics, threats to international peace and security still tend to come second to considerations of national interest for China. From a security perspective those interests are currently very much regionally oriented. In the longer term, however, many analysts are concerned that China’s national interests may take on a more global slant which, alongside high levels of military spending and modernisation of its armed forces, may result in China being able to mount a serious military challenge either to US interests in Asia or beyond its regional sphere of influence. This is particularly pertinent given China’s increasingly global interests, including access to energy and resources. An article in the *Armed Forces Journal* in March 2006 noted:

China is building up its People’s Liberation Army navy (PLAN) not only to achieve regional military dominance in Asia, but also to give Beijing increasing options for the global exercise of military power [...]

Before the end of the decade, new Type 093 SSNs are likely to be able to carry out small scale but politically powerful power projection missions for the Chinese leadership.²¹⁷

The Economist in August 2007 agreed with this assessment, suggesting that “some Chinese officers want to fly the flag ever farther afield as a demonstration of China’s rise”.²¹⁸ Richard Bitzinger of the Institute of Defence and Strategic Studies has also argued:

²¹⁶ US Department of Defense, *Military Power of the People’s Republic of China 2007*

²¹⁷ “China’s submarines pose regional, strategic challenges”, *Armed Forces Journal*, March 2006

²¹⁸ “The long march to be a superpower”, *The Economist*, 2 August 2007

Is Chinese defense spending simply defensive? Bull. The offensive-defensive argument is total nonsense because it's a theoretical argument. The Chinese are engaged in buying large numbers of advanced weapon systems intended to improve the PLA's power projection, area denial, precision strike and battlespace knowledge. Such capabilities can be used in both offensive and defensive contexts.²¹⁹

While China's military build up is causing alarm in some quarters other commentators have taken a more measured approach. According to one author:

The Chinese accept [...] that they are functioning in a world dominated by a United States that in a globalised era is especially privileged [...] Moreover, while China has been increasing its military spending over the past several years, it is not about to exhaust itself in an unproductive arms race with the United States.²²⁰

At a meeting of the EU Institute for Security Studies in March 2006 the view was also put forward that some of the developments in China's military posture "are either exaggerated or are a natural consequence of the rise in China's power and status". It was also argued that "looking at China as a potential threat could become a self-fulfilling prophecy".²²¹ Indeed, John Ikenberry has also argued that China's rise, whilst inevitable, does not mean a violent power struggle for supremacy within the international order will ensue. Instead he has suggested that both the US and China have far more to gain from integrating the latter into the current liberal international order. Writing in the January 2008 edition of *Foreign Affairs* he argues:

The task now is to make it [the current international order] so expansive and so institutionalized that China has no choice but to become a fully fledged member of it. The United States cannot thwart China's rise, but it can help ensure that China's power is exercised within the rules and institutions that the United States and its partners have crafted over the last century, rules and institutions that can protect the interests of all states in the more crowded world of the future.²²²

A. US Department of Defense 2007 Strategic Assessment

Every year the Pentagon publishes a Congressionally-mandated assessment of China's military power, including an evaluation of the current and probable development of Chinese security and military strategy and requisite military capabilities over a 20-year period.²²³

Justification for the publication of such a threat assessment is based on the premise that, whilst the rise of a peaceful and prosperous China should be welcomed, "uncertainty

²¹⁹ "SIPRI report on China disputes US findings", *Defense News*, 18 June 2007

²²⁰ R. Foot, "Chinese Strategies in a US-Hegemonic Global Order", *International Affairs*, 82, 1, 2006, p. 83

²²¹ EU Institute for Security Studies, *Developing a European security perspective on China*, 3 March 2006

²²² G. John Ikenberry, "The rise of China and the future of the West", *Foreign Affairs*, January/February 2008

²²³ The report is mandated under section 1202 of the *National Defense Authorization Act for Fiscal Year 2000* (Public Law 106-65).

surrounds the future course China's leaders will set for their country, including in the area of China's expanding military power and how that power might be used". As outlined above, such uncertainty has led the US to conclude that international responses that "hedge against the unknown" are therefore warranted.

The 2007 report makes the following general observations:²²⁴

- As China's economy grows, dependence on secure access to markets and natural resources, particularly metals and fossil fuels, is becoming a more urgent influence on China's strategic behaviour. At present, China can neither protect its foreign energy supplies, nor the routes on which they travel [...] China has used economic aid, diplomatic favours, and in some cases, the sale of military technology to secure energy deals. China's desire to meet its energy needs, moreover, has led it to strengthen ties with countries that defy international norms on issues ranging from human rights, support for international terrorism and proliferation. Disagreements that remain with Japan over maritime claims and with several Southeast Asian claimants to all or parts of the Spratley Islands in the South China Sea could lead to renewed tensions in these areas.
- Economic success is central to China's emergence as a regional and global power and is the basis for an increasingly capable military. However, underlying structural weaknesses threaten economic growth. Demographic shifts and social dislocations are stressing an already weak social welfare system.
- Non-traditional security challenges such as epidemic disease, systemic corruption, international crime and narcotics trafficking, and environment problems could exacerbate Chinese domestic unrest and serve as sources of regional tension and instability.
- China advocates an 'active defense' posture. However, Beijing's definition of an attack against its sovereignty or territory is vague. The history of modern Chinese warfare is replete with cases in which China's leaders have claimed military pre-emption as a strategically defensive act.²²⁵
- China's acquisition of power projection assets including long distance military communication systems, airborne command, control and communications aircraft, long endurance submarines, unmanned combat aerial vehicles and additional precision guided air-to-ground missiles indicates that the PLA is generating a greater capacity for military pre-emption.
- The pace and scale of its military reforms is impressive. However, the PLA remains untested in modern warfare. This lack of operational experience

²²⁴ A copy of the report is available at: <http://www.defenselink.mil/pubs/pdfs/070523-China-Military-Power-final.pdf>

²²⁵ The Pentagon report cites the Chinese intervention in the Korean War (1950-1953) and border conflicts against India (1962), the Soviet Union (1969) and Vietnam (1979) as examples.

complicates outside assessment of the PLA's progress in meeting the aspirations of its doctrine.

- Asymmetric warfare is a fundamental aspect of Chinese strategic and military thinking. The PLA sees “computer network operations” as critical to achieving “electromagnetic dominance” early in a conflict.
- For the moment China’s military is focused on assuring the capability to prevent Taiwanese independence. However, at the same time, China is laying the foundation for a force able to accomplish broader regional and global objectives. The intelligence community estimates China will take until the end of this decade or later to produce a modern force capable of defeating a moderate-size adversary.
- As PLA modernization progresses, twin misperceptions could lead to miscalculation or crisis. First, other countries may underestimate the extent to which Chinese forces have improved. Second, China’s leaders may overestimate the proficiency of their forces by assuming new systems are fully operational, adeptly operated, adequately maintained and well integrated with existing or other new capabilities.
- In the near term China is prioritising measures to deter or counter third-party intervention in any future cross-Straits crises. In this context the PLA appears engaged in sustained effort to develop the capability to interdict, at long ranges, aircraft carrier and expeditionary strike groups that might deploy to the Western Pacific. Increasingly China’s area denial forces provide multiple layers of offensive systems across sea, air and space.
- China is pursuing improved ISR assets ranging from unmanned aerial vehicles, satellite constellations and “informationized” special forces which would provide targeting data for long-range precision strikes when linked with robust communications.
- China is qualitatively and quantitatively improving its legacy strategic forces.
- Lifting the EU embargo would likely contribute significantly to the PLA’s modernization goals. An end to the embargo would raise the possibility of competitive pricing for arms sales to China, giving Beijing leverage to pressure its existing suppliers to provide even more advanced weapons and favourable terms of sale [...] the transfer of sophisticated military and dual-use technologies that China most likely desires from the EU – C4ISR components and systems, advanced space technology, radar systems, early warning aircraft, submarine technology and advanced electronics for precision guided weapons – would advance PLA operational capabilities.

At a Pentagon press briefing following the launch of the report the US Defense Secretary, Robert Gates, defended the report as a balanced portrait of Chinese military capabilities and concluded:

It paints a picture of a country that is devoting substantial resources to the military and developing... some very sophisticated capabilities. We wish that there were greater transparency, that they [the Chinese government] would talk more about what their intentions are, what their strategies are. These are assessments that are in this publication. It would be nice to hear firsthand from the Chinese how they view some of these things.²²⁶

B. Regional Assessments

1. Japanese Defence White Paper 2007

In July 2007 Japan published its annual defence white paper.²²⁷ Among the country's chief security concerns cited in that assessment were China's military modernisation and the unclear nature of its intentions in the longer term, in particular toward Taiwan. The paper states:

China has been modernizing its military capabilities, backed up by a constant increasing defence budget. The country has thus been steadily growing as an outstanding political and economic power in the region, and the trend of its military development draws attention from countries in the region.²²⁸

In particular the paper draws attention to the lack of transparency in China's defence policies, capabilities development and expenditure. The conduct of China's ASAT test in January 2007 and the lack of a "sufficient explanation" from the Chinese government was highlighted as a specific example. The paper also expressed concern that China's current rate of military modernisation is shifting the military balance between Taiwan and China, to the advantage of the latter. The paper concludes:

As for the specific objective of China's rapid military modernization, it seems that the country is focusing on the implementation of measures to deal with the Taiwan issue. Some, however, argue that China is modernizing its military capabilities not just for the treatment of the issue, in light of the country's rapid development, long-lasting modernization of its military forces, and lack of transparency regarding its military capabilities. Concerns over the future modernization of the Chinese military forces have been thus increasing. China regards the modernization of its military capabilities as part of the nation's modernization, and it is necessary to carefully analyze the influence that the military modernization by China, which is steadily growing as a regional power, will exert on the regional situation and Japan's national security.²²⁹

²²⁶ "Report documents Chinese military power, calls for transparency", *American Forces Press Service*, 25 May 2007

²²⁷ A copy is available at: http://www.mod.go.jp/e/publ/w_paper/index.html

²²⁸ *Defense of Japan 2007*, p.47

²²⁹ *ibid*

2. Australian Defence Update 2007

In July 2007 the Australian Department of Defence issued a major review of its national security policy, the third update to its defence white paper since 2000.²³⁰

The paper is premised on the view that the current international security environment is experiencing a period of fundamental change. Whilst it acknowledges that Australia faces no direct conventional threat at present, its strategic situation is becoming increasingly complex. It suggests that “serious threats” to stability continue to emerge from the Middle East; the strategic landscape of the Asia-Pacific is shifting, mainly shaped by the US, Japan, China and India; whilst the threat of global terrorism and proliferation of WMD continue to gain prominence.

With respect to China more specifically, the paper expresses concern over the pace and extent of military modernisation in the country, suggesting that it has the potential to cause instability within the region. The paper states:

China’s emergence as a major market and driver of economic activity both regionally and globally has benefited the expansion of economic growth in the Asia-Pacific and globally. But the pace and scope of its military modernisation, particularly the development of new and disruptive capabilities such as the anti-satellite (ASAT) missile (tested in January 2007), could create misunderstandings and instability in the region.²³¹

It also highlights the importance of the US-China relationship to Asia-Pacific security, specifically noting that despite the increasing economic interdependence of both countries, an element of strategic competition exists in the region. As such, the paper calls for the US-China relationship to be managed carefully and “for the good of the entire region”. It concludes by stating:

Australia’s strategic engagement with China has been limited to date, but it is growing at a pace that recognises our substantial shared interests in regional security. We maintain a valuable dialogue with China and look forward to expanding the relationship at a pace comfortable to both countries.²³²

This commitment is consistent with Australia’s previous position on China’s economic and military development, which has been largely dovish. However, a number of analysts have pointed to the inclusion in the defence update paper of a commitment toward greater emphasis on trilateral relations with the US and Japan as indicative of Australia’s strategic allegiances within the region. The paper states:

Japan’s alliance relationship with the United States has been one of the stabilising features of post-World War II Asia, and will continue to play an important role. Trilateral cooperation between Australia, Japan and the United States will be increasingly important in this context. The Australia-Japan Joint

²³⁰ Both a copy of the Australian defence white paper 2000 and the 2007 update are available online at: <http://www.defence.gov.au/whitepaper/> and <http://www.defence.gov.au/ans/2007/default.htm>

²³¹ Australian Department of Defence, *Australia’s National Security: a Defence Update 2007*

²³² *ibid*

Declaration on Security Cooperation marks an important milestone in the bilateral security relationship.²³³

Hugh White at the Australian National University has argued:

The emphasis on so-called trilateral defence ties with Washington and Tokyo was the biggest shift [in the paper].

It now appears that he [John Howard] is moving to a policy under pressure from Washington and Tokyo to be less welcoming of China's growing power. I think that China will be very uncomfortable with it.²³⁴

However at the time the former Australian defence minister, Brendan Nelson, played down the significance to China of proposed trilateral co-operation with the US and Japan commenting: "I don't think anything should be read into the defence update as far as China is concerned".²³⁵

With the election of a new government under Prime Minister Kevin Rudd, however, it is unclear whether Australia's approach to the development of closer trilateral relations with the US and Japan, and its overall approach to China will now be re-evaluated. Whilst in opposition, for example, Mr Rudd opposed John Howard's signing of a joint security declaration with Japan in early 2007, expressing concerns that it might cause problems for Australia's longer term relations with China.²³⁶ Early on in his premiership Mr Rudd also indicated that that Australia should give higher priority to developing its relationships with China and India.

C. UK Position

The British Government has consistently maintained that China should, through mutual dialogue and co-operation, be encouraged to manage its political, economic and military development within the context of being a responsible stakeholder in the international community. In a speech in April 2006 the then Foreign Secretary, Jack Straw, stated that the UK wants:

China to work together with its key Western partners as a responsible and leading member of the international community, strengthening the international norms and systems which protect our vital interests, and dealing with the common challenges of this century; and internally, we want China to pursue progressive political and economic reforms which should enable it successfully to manage the risks of its extremely rapid development.²³⁷

²³³ Australian Department of Defence, *Australia's National Security: a Defence Update 2007*

²³⁴ "Australia says China military rise risks instability", Reuters, 5 July 2007

²³⁵ *ibid*

²³⁶ "Kevin Rudd's resounding victory", *The Economist*, 26 November 2007

²³⁷ Jack Straw, "China and International Action", Speech to the Smith Institute, 26 April 2006. Available at: <http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate>ShowPage&c=Page&cid=1007029391629&a=KArticle&aid=1145891234764%20&year=2006&month=2006-04-01&date=2006-04-26>

That approach was also reiterated by the FCO in 2006 when asked about the British Government's opinion of the Pentagon's 2006 report on China's military development. The then Minister of State at the FCO, Ian McCartney, stated:

The central themes of the report including China's need to increase transparency in its military planning and budgeting, to guard against the risks of miscalculation in the Taiwan Straits, and for China to build up its bilateral co-operation and engagement as a responsible stakeholder in the international community are ones which the Government broadly share.²³⁸

In response to the Chinese testing of its ASAT capabilities in January 2007, the FCO did however express concern over the development of such technology and in particular chose to highlight what it regarded as an inconsistent approach by the Chinese government:

On 18 January officials from our embassy in Beijing made representations to the Chinese Ministry of Foreign Affairs about the missile test, expressing concern about the lack of international consultation before the test was conducted and the possible impact of debris from the test on other objects in space. The UK also expressed concern that the development of this technology and the manner in which this test was conducted is inconsistent with the spirit of China's statements to the UN and other bodies on the military use of space. As part of our regular dialogue on international issues, we will continue to work to encourage China to play a constructive role in the international community.²³⁹

For the longer term, the Development, Concepts and Doctrine Centre (DCDC) within the MOD identified in its January 2007 edition of *Strategic Trends 2007-2036*, the possibility that over the next 20 years:

China and India's growing global economic status **will** translate into a significant increase in their international political influence, diplomatic power and **possibly** foreign overseas commitments, especially in their regional near-abroad. This trend **may** lead to increasing strategic competition between them where their emerging markets, sources of raw materials, interests and national priorities coincide and conflict. It **may** also lead to competitive tendering for allies and partners and possibly an Asian arms race.²⁴⁰

²³⁸ HC Deb 5 June 2006, c311-12w

²³⁹ HC Deb 25 January 2007, c1948w

²⁴⁰ Ministry of Defence Development, Concepts and Doctrine Centre, *Strategic Trends 2007-2036*, 3rd edition, January 2007